Michael Thomsett

TECHNICAL ANALYSIS OF STOCK TRENDS EXPLAINED

An Easy -to-Understand System for Trading Successfully

Published by Ethan Hathaway

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PART I: INTRODUCTION

Traders have heard about “fundamental analysis” and “technical analysis” and often decide to become adherents to one or the other. However, you can use both of these to:

a. complement one another and improve skills in timing of trades.

b. confirm and cross-confirm reversal indicators.

c. create a wide view that brings in elements of price as well as financial trends.

Segment 1. Fundamental vs. technical analysis. (Differences and similarities; using both together in a coordinated program.)

The differences between these two approaches to analysis are significant. Fundamental analysis is defined as the study of financial trends (profitability and cash flow), expressed in ratios, and involving several years' worth of status and results. It includes many components, all based on the historical financial record. Among these, the most significant results are:

a. revenues and earnings over several years, aimed at spotting trends that may be either positive or negative. For example, if revenues are erratic or flat, it is difficult to estimate future direction. If revenues are rising but net profit (or net return) is declining, it is a sign of poor controls by management; if net earnings rise and net return is steady or improving, that is a signal of positive growth.

b. debt ratio measures the organization's reliance on borrowings, versus the use of equity to fund growth. This is derived by dividing long-term debt by total capitalization. (Total cap is the sum of long-term debt plus shareholders' equity). If the debt ratio is high or increasing, it means future net earnings will have to be devoted increasingly to debt service and interest expense, and less for funding expansion or paying dividends.

c. dividend yield is a key fundamental, and investors seek companies whose dividend is steady or growing. Those whose dividends have increased every year for 10 years or more (called "dividend achievers") have tended over time to out-perform the market in general, and have also been able to minimize the year-to-year volatility in financial results more successfully than companies whose dividend has fallen or been missed.

d. price/earnings ratio is an oddity because it compares a technical indicator (price) to a fundamental (earnings). A potential problem is that price is current and earnings are historical. For this reason, a study of PE should involve several years of the *range* of PE. Investors seek consistency and a relatively modest range. When the multiple of PE is too high, the stock is probably overpriced; when too low, it indicates a lack of interest in the company.

e. fundamental volatility goes beyond the study of a multi-year trend, such as that for revenues and earnings. It is a study of the reliability in year-to-year changes. Investors like predictability, such as steady revenue and

earnings growth and a reliable and consistent net return. Some results, however, tend to be highly volatile, with results ranging from high revenues and earnings one year, to reduced revenues and a net loss the next. This makes it impossible to predict future trends; so fundamental volatility is a key indicator.

There are many additional fundamental indicators. These are only a few of the more important ones. While the fundamentals are focused on the financial results reported over many years, technical analysis is focused mostly on price (as well as trading volume and momentum). Among the traditional technical indicators are:

a. price-based movement within the established range, which expresses volatility and changes in volatility. An established range is set between resistance at the top and support at the bottom. The breadth of this trading range defines levels of volatility.

b. tests of resistance and support which may fail or succeed. A failed test of resistance or support is most likely to lead to price movement in the opposite direction. A successful test leads to a breakout. The breakout itself may reverse so that prices return to the established trading range; or a new range can be established. It often occurs that previous resistance becomes new support in an upside breakout; or that previous support becomes resistance in a downside breakout.

c. gapping price movement may involve the often-recurring common gap, or provide a symptom of a strong new trend in price. When price gaps are accompanied by very strong breakout, without a reversal, the two indicators together (breakout and gaps) signal a movement above or below the previous trading range.

d. volume-based indicators, notably volume spikes as a signal of reversal. This should be confirmed by other indicators, but exceptionally high volume in a single trading session is a key reversal warning.

e. momentum indicators measure the speed and strength of price direction, and several valuable indicators provide overbought and oversold ranges that, when confirmed, add confidence to the appearance of a price reversal.

All technical indicators need to be independently confirmed; this is a basic premise in technical analysis, because no indicators are 100% reliable. Any of the above five areas may be confirmed by any others. Furthermore, reversal patterns are found in candlestick patterns. Chartists may rely on candlesticks to confirm price-based, trading range, gapping action, volume-

based or momentum indicators; and any of these may cross-confirm candlestick patterns as well.

The value of using both fundamental and technical indicators is related to the key reason for performing analysis: to improve timing of entry and exit. All technical analysis relies on indicators and their confirmation. With this in mind, even the ardent technical analyst may select and qualify companies and their stocks by also reviewing the fundamentals, as an initial step. The most effective means for improving a program of analysis is to use both fundamental and technical tests together. This recognizes that both provide value in different, but complementary ways.

Segment 2. Does technical analysis work? (Examples and a case study showing the value of technical analysis.)

The question every investor should ask about all types of analysis is: *Does it work?*

Technical analysis draws together a set of indicators of many types, including:

a. Traditional (Western) technical analysis is familiar to technicians. So-called "Western" technical analysis includes a broad range of indicators based on price patterns. These include the all-important testing of the trading range borders (resistance at the top and support at the bottom). These tests take many forms, including price gaps, breakouts (successful and failed), double tops and bottoms of price spikes, patterns like wedges and triangles, and much more.

b. Candlestick reversal indicators are patterns of single sessions, double, triple or more, that signal a reversal in price. These are signals that, based on momentum and changing strength among either buyers or sellers, create recognizable patterns anticipating the end of a current trend and the beginning of a new trend.

c. Trends are expressed in many forms, including price and momentum, and may be tracked through moving averages and trend lines. "The trend," one market adage tells you, "is your friend" but a more important observation is the extended adage, "The trend is your friend, until it ends." Trend analysis through price, volume, and momentum, helps identify when the current trend is likely to end and reverse.

d. Volume indicators are found in many forms, all designed to determine when an established trend direction is beginning to reverse. This may be seen in complex analytical signals or in a sign as simple as a single-session volume spike.

e. Momentum indicators track not only the direction a price is trending, but its speed. When momentum begins to slow down, it indicates that buyers or sellers are losing control of the trend, meaning the other side may be about to take over as the price trend reverses.

All of the indicators and ranges of indicators work together to help analysts determine:

- how long a trend will last.

- when the trend begins to slow down.
- when the specific turning point is likely to occur.

The turning point is the key. Traders enter new positions and exit old positions based on the study of these signals. However, no one signal is enough by itself to provide confidence that the trend is on the verge of reversal. For this, traders rely on one of the basic requirements of timing: *confirmation*.

Confirmation is the verification of one signal with two or more additional signals showing the same information. For reversal timing, traders rely on confirmation to signal that the first indicator is probably reliable, since a second (or third) indicator provides the same signals.

Confirmation may take several forms, including:

a. Two similar signals indicating reversal.

b. Two different signals, both signaling reversal.

c. An original signal confirmed by another; confirmation may occur with either signal providing the initial indication, with the second acting as the confirming signal. In other words, any indicator may be a leading or lagging indicator.

What if confirmation signals contradict one another? What action should a trader take when this occurs? Guidelines:

a. Do not act when two equally strong indicators contradict one another.

b. Assign greater weight to an indicator considered stronger or more important.

c. Wait for a third indicator confirming the likely reversal. Do not act until it has been found.

Example: Alcoa (AA) demonstrated a bearish trend in the months of February, March and April, 2012. This was not the result of any single indicator, but of a series of indicators, all confirming the bearish trend. These included:

a. downtrend extending over a four-week period from March 12 through April 9.

b. volume spike in mid-April, a single session of substantially larger volume than the typical sessions preceding it.

c. upside price gap immediately after the volume spike, which could signal a reversal and subsequent uptrend. This demanded caution among traders, since the meaning of the gap was not clear. Some gaps do signal reversal, while others are last-gasp efforts to reverse the longer-term trend.

d. bearish harami cross, a two-session candlestick indicator consisting of a black session (moving downward) and a doji (a session with little or no trading range, creating the shape of a cross, and existing within the range of the previous session).

This example demonstrates how three strong downward indicators confirmed one another. The combination of the extended downtrend price movement, the volume spike, and the bearish harami cross were stronger together than the uncertainty of the upside price gap.

In coming segments, the specific trends, gapping price movement, and candlestick indicators are examined in greater detail. This example is intended only to show how a set of dissimilar reversal indicators work together and act as strong confirmation of change in the existing trend.

Segment 3. Critics of technical analysis.

Technical analysis has a reputation among the more conservative sector of the market. It is perceived as high-risk and unreliable, appropriate only for speculation and not as a means for anticipating price movements accurately. Critics make their case by citing the following:

a. Short-term price movement is chaotic. It is true that short-term price movement is unreliable and cannot be predicted accurately. Due to many conflicting and contrary price pressures on both buy and sell sides, the current price picture is too complex to predict.

b. The Dow Theory (see more below) cautions that short-term price movement is not reliable. The Dow Theory, the basis of technical analysis, points to the value of intermediate and primary trends; and discounts short-term trends due to the chaotic nature of immediate price movements.

c. According to the random walk hypothesis, (see more below) any short-term price movement is 50-50. The random walk hypothesis puts forth the idea that short-term prices cannot be predicted since any future price movement may move up or down with equal probability. This hypothesis supposes that no influences within the market affect this random nature of prices.

d. An alternative concept is the efficient market theory (see more below); this also disputes reliability of technical analysis. This theory is favored in academia, but contradicts the random walk hypothesis. It proposes that the current prices of all securities are "efficient" because it expresses all information known to the public. As a result, all current prices also are fair and accurate.

e. No indicators provide 100% certainty. This is true. No indicator, by itself, can ensure 100% accuracy concerning the next move. Even strong, seemingly reliable indicators made more convincing with confirmation, are never 100% reliable.

The facts dispute these criticisms. For example:

a. Short-term price *patterns* provide reliable price information. Within the chaotic nature of short-term price movement, intelligence can be gathered by the combination of indicators. These involve not only price, but volume, momentum, and moving averages. These are subtle indicators of price strength or weakness on their own but, through the process of confirmation, provide insight about the trend and how and when that trend is coming to its

conclusion. Combined with pattern analysis on charts, the combined science of technical analysis is designed to organize the apparent short-term chaotic nature of prices, and to provide predictable hints about evolving trends.

b. The Dow Theory supports technical analysis. The theory focuses on long-term trends and market movements. However, due to the unreliability of short-term swing movements, traders need to rely on the indicators and confirmation that strengthen timing for entry and exit.

c. The random walk hypothesis is disproven by observation of price activity. The random walk hypothesis is easily disproven. Anyone who has observed price behavior upon any earnings surprises, for example, will note the exaggerated reaction of price and the fast correction of that exaggeration. This makes the price behavior predictable rather than random.

d. The market is far from efficient; too many influences are at play. The belief in price efficiency is also questionable. If all prices were efficient, no over-reaction and subsequent correction would occur. All prices would be efficient (meaning stable) and would not react in an exaggerated manner. There are too many competing and conflicting influences at play at all times to expect efficient price movement.

e. There are no alternate systems providing 100% accuracy. No indicators -- not even fundamentals -- are ever 100% reliable. Any system in use has to rely on improved intelligence and information in the moment. However, traders attempt to improve timing of entry and exit based on the indicators and confirmation available on the market. An expectation of complete accuracy or reliability would not be realistic.

Additional observations concerning the Dow Theory, the random walk hypothesis and the efficient market theory, follow.

The **Dow Theory** contains a series of beliefs concerning the stock market and its trends. This serves as the basis for technical analysis. The underlying tenet states that the market is in a bullish (upward) trend when one of the averages advances above a previously establish high index value; and when this advance is *confirmed* by another average. On the other side, when both of the averages fall below a previously established bottom, the market is in a bear trend.

This theory was put forth originally by William Peter Hamilton and other editors of the Dow-Jones Company and successors of the original editor, Charles Dow. Although Dow himself never used the term “Dow Theory,” it has grown into a trading system based on his original editorials.

The theory contains six important aspects:

1. The market has three trends. Primary movements (or trends) in the market last between several months and several years, and may be bullish or bearish. Secondary movements (or reactions) last between a few days and a few months and represent retracements against the primary trend between one-third and two-thirds of the previous price movement. Short-term, or "short swing" movements last from a few hours to a few days and are likely to contradict established price direction (bullish or bearish); however, these short-term swings are reliable as predictions of long-term price trends.
2. Trends consist of three specific phases. Every trend moves through three phases. The *accumulation phase* is the period when investors with exceptional information actively buy (in a bullish trend) or sell (in a bearish trend). The *public participation phase* occurs when, due to price movement caused by activity in the accumulation phase, the general public joins in the trend. Finally, the *distribution phase* occurs when speculators enter the market and over-buy or over-sell, and at this point the observant investor begins to transact in the opposite direction.
3. All news is discounted by the market. This means that current prices absorb all news rapidly and reflect that news in the price. As stated in the efficient market theory, the belief that all news is immediately taken into the current price explains much of short-term price movement.
4. The market averages confirm one another. Under this belief, the three averages (industrials, transportation and utilities) all cross-confirm any major trends as they develop. No trend is established until a change in direction surpasses a previous high or low point, and the same movement is repeated in a second of the three averages.
5. Trends are further confirmed by changes in volume of trading. The price direction of an individual security is confirmed as a major trend if and when the trading volume is sufficiently high to indicate that the movement itself is not a reaction or secondary factor, but a major, new trend.

6. The trend will continue until new, contradictory signals emerge. The theory states that within an existing trend, short-term counter-movements do not matter as long as the prevailing indicators continue in the same direction. A trend ends only when reversal occurs in opposing movements, confirmation, and volume changes indicating a new trend is beginning.

The **random walk hypothesis** applied to investing states that stock price changes having the same statistical distribution act independently, so that so past activity can be used to predict future price activity. In other words, price movement is unpredictable. This theory ignores the effect of using technical indicators (price volume, momentum) to improve the timing of entry and exit points.

If price movement is determined by a series of truly random phases, it means that the forces of supply and demand are not applicable to the stock market. It further assumes that observed past price behavior has no meaning in future price outcomes. However, investors using technical analysis have observed a specific "cause and effect" on many levels, which contradict the random walk hypothesis. For example, price movement in reaction to earnings surprises tends to be exaggerated; and those exaggerated movements tend to self-correct within one to three trading sessions. As a *predictable* aspect of price movement, this tendency is predictable and can be traded upon, even though many potentially random factors are also in play.

The random walk hypothesis is an interesting starting point for the study and critical observation of technical analysis. This enables traders to challenge the theory and to develop alternative observations of their own, based on charted price patterns, moving averages, and price or volume-based notable developments.

The **efficient market theory** (or, hypothesis) is the belief that all current pricing of securities is efficient and contains adjusted prices for all known information about the security. The theory further claims that it is impossible to achieve exceptional returns on investments, since all current prices are fair.

A "weak-form" theory points to pricing of securities based on publicly known information as the basis for the market's efficient. A "semi-strong" version combines currently known public information plus new information

to make the case for efficiency. A “strong” version of the theory adds in unknown (insider) information and claims that all forms of data, known and unknown to the public, create the current pricing. Those who subscribe to the efficient market theory admit that future valuation is likely to evolve as the information pool changes; and that as a result, the efficiency itself is not permanent.

A close link may be found between the efficient market theory and the random walk hypothesis. Originally, those promoting the random walk also believed the randomness caused (or was caused by) price efficiency. However, prices cannot be both efficient and random at the same time or for the same reasons. One school of thought argues that the efficient market theory applies to individual stocks but not to the overall stock market.

In recent years another belief has emerged, that the random walk and efficient market models contradict one another. Stocks with low PE ratios tend to outperform other stocks. If the market were efficient, performance levels would not vary among disparate PE securities. The observation about PE ratios also challenges the claimed random nature of prices.

Segment 4: Assumptions behind technical analysis.

The factors affecting price contain specific and predictable attributes. Among these factors are:

a. Economics. The effects of economics cannot be ignored in how they affect prices of securities. The most basic of economic indicators, *supply and demand*, affects prices in two ways. The most immediate effect is seen in the straightforward interaction between buyers and sellers. The current price of any security is the agreed-upon price at which buyers have been willing to buy, and sellers have been willing to sell. This is expressed in an expanded way in the trading range itself. The top of the range - resistance - is the highest price that buyers are willing to pay, and the bottom of the range - support - is the lowest price sellers are willing to accept.

On a larger scale, economic supply and demand for all consumer and commercial products affects supply and demand for every company whose stock is traded on the public exchanges. As supply falls for a product, pressure is placed on prices and profits rise, leading to stronger stock prices. As demand falls, prices are weakened and as a consequence, profits fall.

Other economic influences include *monetary exchange rates*, notably for companies whose outlets are global (for example, for McDonald's, Coca Cola, and Johnson & Johnson); trends in *employment* and unemployment; and *tax policies* at federal and state levels.

b. Fundamentals and their trends. Fundamentals including profit or loss, working capital, and competitive position within an industry, affect prices through historical volatility and identification of either *value* or *growth* investments. The influence of fundamental volatility on the technical side cannot be overlooked, as both aspects are part of the same, overall trend in financial strength and stock prices.

c. Market behavior. The market does not behave rationally or logically. Reaction is invariably exaggerated to any and all news and, while the Dow Theory observes that the market discounts all news, market participants tend to add a premium to that same news. This is important information for the *contrarian* investor, one who acts in the opposite direction from the crowd. The market is dominated by emotional reactions at three levels. As prices rise, *greed* leads investors to buy, often at or close to the price top. As prices fall, *panic* leads investors to sell, often at or close to the bottom. When the direction of the market is unclear, *uncertainty* dominates and

investors tend to not act even when strong indicators provides clues about emerging price trends.

These emotional reactions lead to the common practice of "buy high and sell low" in spite of the sound advice to "buy low and sell high." Contrarian investors recognize that market behavior is misdirected, and are able to trade intelligently and to ignore the crowd mentality and emotional over-reaction of the market at large.

d. Market-wide trends and their effect on individual securities. The markets are organized around popular indexes that track movement in select groups of securities. Most popular among these are the Dow Jones Industrial Average (DJIA) consisting of 30 stocks; the S&P 500, which tracks 500 companies; and the NASDAQ Composite, which tracks over 2,700 companies.

One important function of these market indexes is their use as *benchmarks*. A benchmark is a performance metric used by financial service organizations to measure and compare performance of portfolios being managed, or of mutual funds offered to the public.

However, the popular indexes have come to represent "the market" in the minds of many investors and traders. Although the DJIA tracks only 30 stocks, for example, many traders and investors time their entry and exit into individual securities based on changes in the average, primarily the DJIA, S&P or NASDAQ.

e. Market definition in terms of indexes. The adage that "a rising tide lifts all boats" often is cited to explain how market averages can be used reliably to judge market conditions and sentiment. As a consequence, a broad assumption is made that individual securities are going to track market-wide movements closely. This belief - that the indexes determine movement of individual stocks - is misleading.

The measurement of *beta* reveals how broad market movement and individual stock price movement are related. Beta measures the tendency of an individual stock and its price volatility, in relation to the broader market.

The entire market is assigned a beta value of 1. (This may be applied to any index, but for stocks it usually is used for the S&P 500.) If a stock tracks the market exactly - meaning it rises or falls exactly in line with the index - then that stock's beta is also 1. Some stocks have less responsiveness, or volatility, than the overall market. Their beta will be less than 1. For example, if a company's beta is 0.5, it means the price will move at half the

rate of the index. If the market increases 2%, a 0.5 beta stock will move in the same direction, but only by 1%. Some stocks tend to outpace the overall volatility of the market. For example, if the market rises by 2%, a stock with a beta of 1.25 is expected to rise 2.5%.

Investors who recognize the beta application of their individual companies as compared to the broader market, are using those indexes effectively to judge the risk of their portfolio. However, it is a mistake to assume that market direction always mandates the likely degree of movement (or even the price direction) of the individual security.

The assumptions underlying technical analysis are not specific, but serve only as guidelines. No one can predict the direction of price movement or duration of trends, either for the entire market or for individual securities. However, collectively the effects of these factors allow a technical study of pricing and the development of timing strategies that provide more successful timing of entry and exit.

PART 2: CHARTS

Segment 1. What is a chart?

A chart is the visual summary if a security's price history, spanning a series of days, hours or minutes. It provides the analyst or trader with an immediate sense of the security's performance, current trend direction, volatility, and any unusual but notable price patterns (for example, sizeable price gaps or changes in the breadth of trading).

Purpose of the chart

A chart does not tell you precisely what a security is likely to do next, in terms of price movement. As one of the core principles of the Dow Theory cautions, short-term price swings are extremely volatile and unreliable.

Does short-term price volatility mean that short-term price movement is impossible to read? No; in fact, chart interpretation focuses on a few short-term but important signals, including:

1. Changes in trend direction, anticipated through a series of signals.
2. Combined price, volume, moving average and oscillator signals.
3. Specific reversal patterns in either Western technical analysis price signals or Eastern (candlestick) reversal patterns.

How to read a chart

The central portion of a chart shows the price. This is scaled according to the breadth of trading over the period reported. Thus, every chart is scaled differently. The price portion shows the high and low of the day as well as opening and closing price.

For example on the candlestick chart of China Pharmaceutical Group Ltd., the daily high and low prices are reflected within each day's candlesticks. The high and low are expressed by the range of the candlestick including the upper and lower extensions (shadows). Opening and closing prices are found in the rectangles. A white rectangle reveals an upward-moving day, meaning the open was the price at the bottom of the rectangle and the close was at the top. A black rectangle occurs in a downward-moving day. Thus, the open is the top of the rectangle and the close is at the bottom.

A number of overlays or additions can be added to the chart. These include moving averages, normally shown as an overlay to price so you can spot MA crossovers, convergence and divergence points; oscillators, shown above or below the central price area; and volume, usually shown below as a series of vertical bars.

The same chart for China Pharmaceuticals, Ltd. is next shown with a series of additional indicators added. These include:

1. MACD, or *Moving Average Convergence Divergence*, an oscillator based on the study of two moving averages. These are shown as blue and red overlays to the price chart. Note how at certain times, the two lines converge (or move closer together) or diverge (move apart). These changes between the two moving averages are significant, and are explained in greater detail in a later section.
2. Volume, shown as a series of green bars beneath the price section. Note the increase in daily volume as it spikes in mid-June at the same time that the price gaps upward, indicating very strong buying interest in this

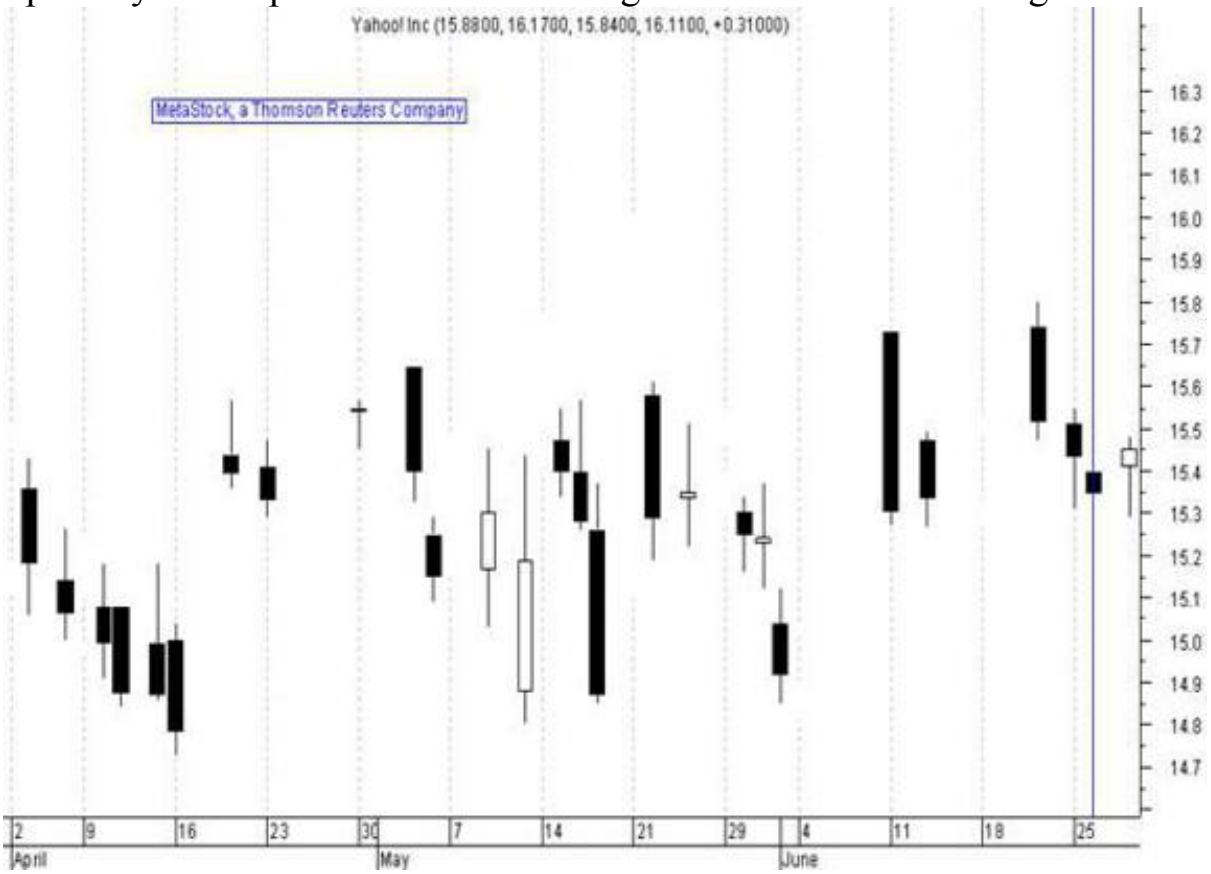
company, which levels out in July, and at the same time volume begins declining back to more normal levels.

3. Relative Strength Index (RSI), shown at the bottom as a running red line. This is a momentum oscillator that reveals when a company is overbought or oversold. Although the levels can be adjusted, the indicator usually identifies 70 as the overbought level and 30 as the oversold level. These can be used to confirm timing of entry to sell (when the RSI line moves above 70) or to buy (when the line moves below 30).

In this chart, the RSI level dipped below 30 throughout April, May and June, all potential buy signals or confirmation. As price moved up, the point where RSI exceeded 70 (the last three weeks of June), was a sell signal or confirmation of a coming bearish reversal.

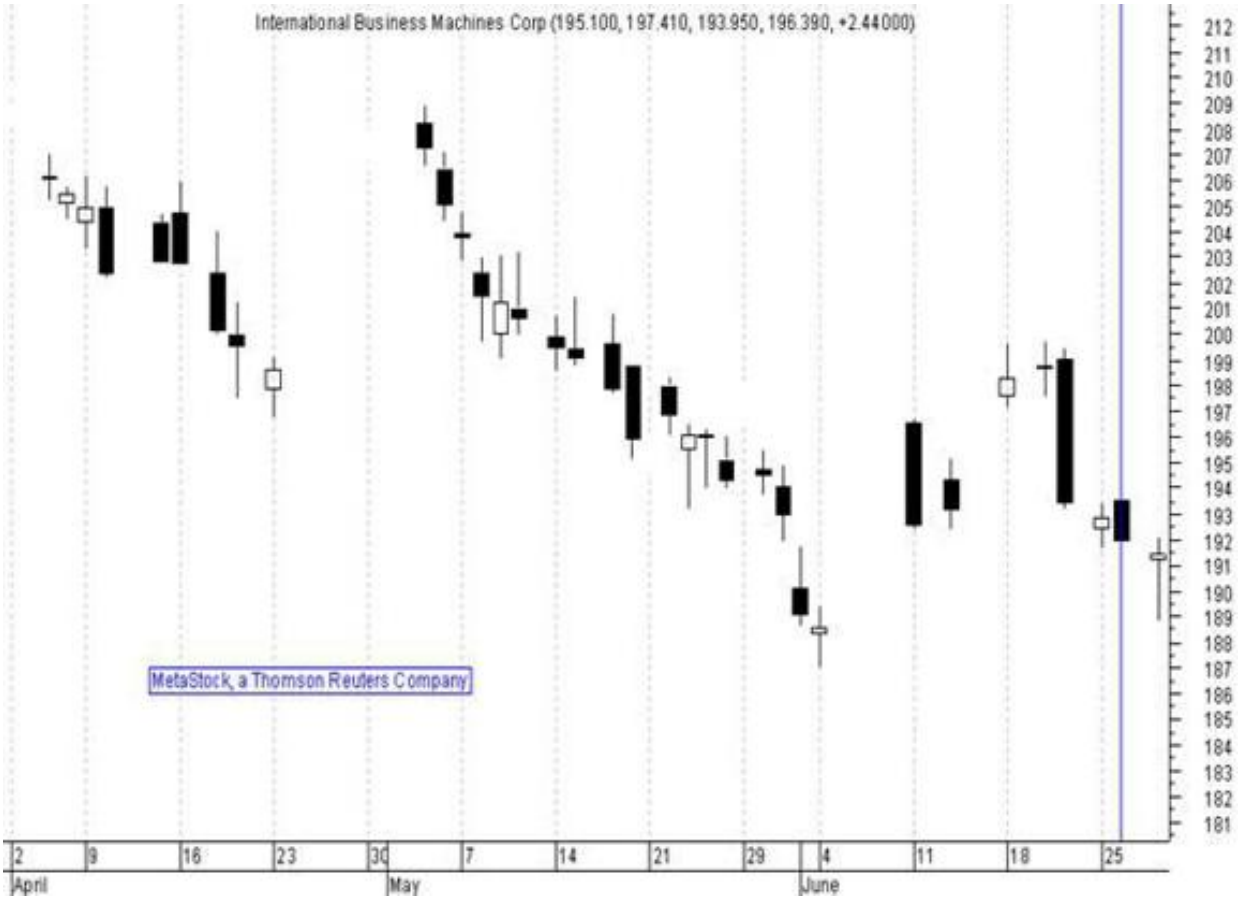
Scaling is reported on the right side of the chart, and is determined by the range of trading during the period reported. For example, Yahoo is called in increments of one-tenth of a point. The price activity seems quite volatile on

this scale; however, none of the sessions is greater in range than a half point; given the small increments, the chart appears more volatile than it is, especially in comparison to charts with greater incremental scaling.



For example, IBM's chart is called in one-point increments. At first glance, the price activity on this chart appears *less* volatile than on the chart of Yahoo. However, because the scaling is 10 times greater (one point versus one-tenth of a point), IBM is actually much more volatile than Yahoo.

This makes an important point concerning chart analysis. Every company's volatility has to be analyzed on its own merits and based on scaling. The scaling is automatically set so that all of the price information fits within the frame given the time period involved. As a result, the best way to analyze and understand a company's price volatility is within the history of the company itself. It is not realistic or accurate to compare two different companies by studying their charts, unless the scaling is identical.



The time period also affects scaling. For example, if price moves in a broader trading range over time, a longer time period will require changes to the price scale as well.

Time period is shown below the chart. Time periods are most frequently daily, but it can be summarized into weeks, or more detailed into hours or even minutes or ticks (changes as they occur). An interesting point concerning price pattern analysis: Well-known and frequently observed patterns indicating and signaling reversal tend to apply with equal reliability regardless of the time period of the chart.

The role of the "chartist"

A chartist is the name given to anyone who relies on price charts to anticipate or predict price movement in three possible directions: upward, downward or sideways. A price trend may serve as a continuation of the current direction, or as a reversal.

The chartist is continually aware of the existing trading range and how price behaves within that range. Reversal signals can appear at any point; but in order for them to draw a chart's attention, there must be a trend in effect to be reversed. Furthermore, reversal is most likely at or near the borders of the

trading range. A chartist looks for signals near resistance of a possible breakout, rally and creation of a new, higher trading range -- or for signals of reversal and retreat back into the established range.

On the other side of the trading range, a chartist seeks the same kinds of signals for breakout below support and establishment of a new, lower range and a downtrend - or reversal back into the existing trading range.

Charts to visualize volatility

The chart is easily applied as a tool for recognizing volatility. The trading range defines price volatility, not only in its breadth of points, but also by whether or not the trading range holds steady over time.

If you observe prices moving above resistance or below support, do those new levels hold? Or does price retreat back into the established range? The predictability of price change over time defines volatility more than price movement within an established breadth from resistance to support.

If stock prices remains within their set range, chartists tend to take greater confidence in the predictability, even while recognizing that breakouts above or below can occur. However, when price regularly bolts above resistance or below support, without self-correcting, it makes it more difficult to predict or anticipate future price movement.

Relationship of charting to the fundamentals

The tendency among chartists and other technicians is to observe price, volume and momentum by themselves, and to ignore the fundamentals. However, technical and fundamental indicators are related and price activity responds to fundamental changes.

Fundamental factors affecting price movement include:

a. News and announcements of product expansion.

b. Mergers and acquisitions.

c. Earnings, and especially earnings surprises.

All of these fundamentals have immediate impact on price, in the short term and, often, permanently. Price does not operate solely on the effects of supply and demand within the market. That supply and demand is created by market perceptions about potential for future profits and price growth; and that is derived directly from the fundamentals.

Segment 2. Types of charts in use today: line chart, OHLC, and candlestick charts

Stock price charts come in many varieties. Individual traders may prefer one type over another. This decision will be based on:

1. Familiarity and comfort.
2. Ease of use.
3. Underlying purpose.

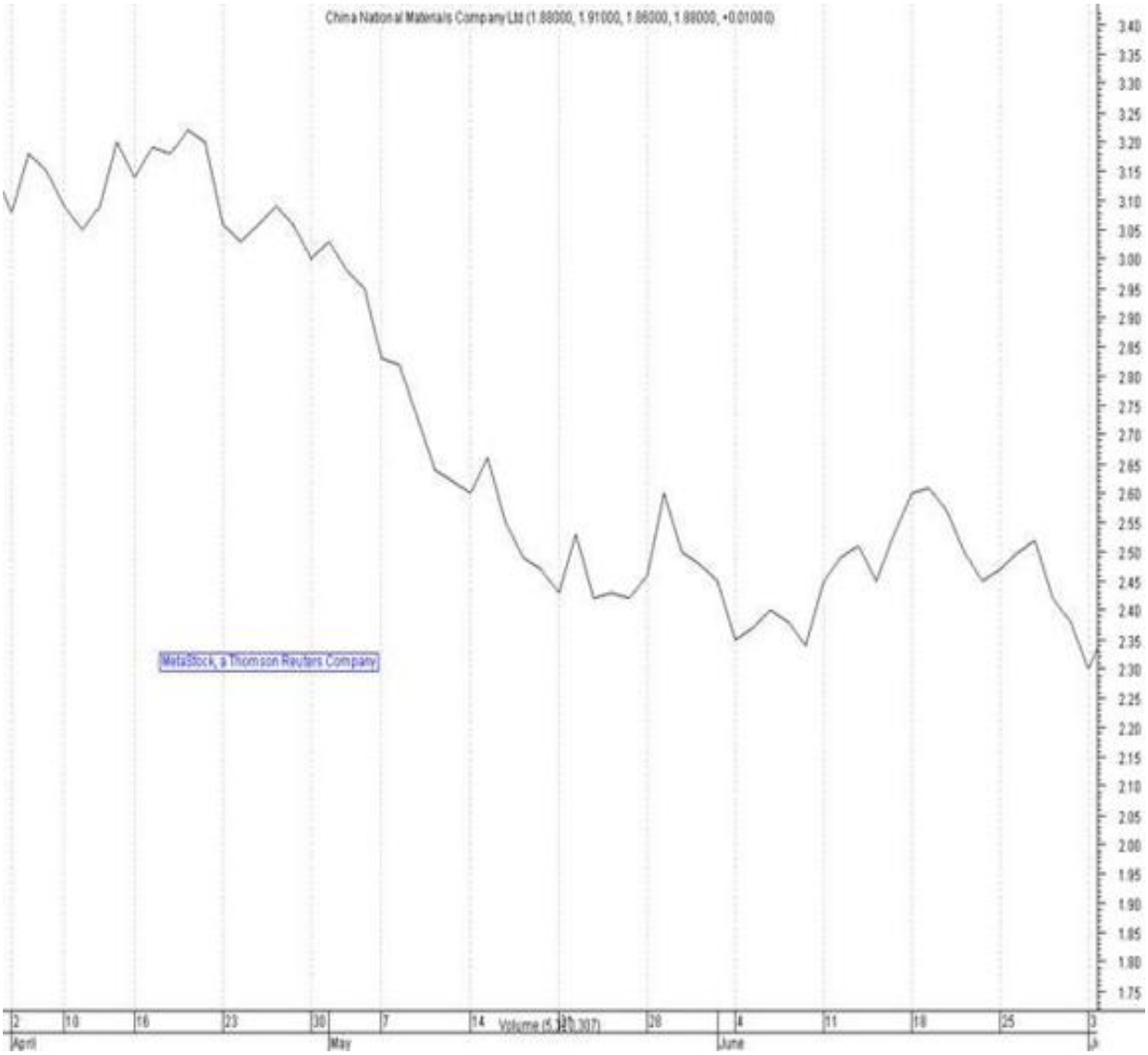
The line chart

The *line chart* exhibits information with a straight line (or lines) connecting data values. For example, if a value moves from 30 to 35, a straight line moves diagonally between these two values.

The line chart was used in the past to report stock prices; a single line would usually be based on closing prices for each period. This format for stock charting has been replaced more recently by more advanced charting methods. With the availability of online charting services that automatically calculate values, a more visual formatting of prices (including open, close, high and low) is a more informative form of charting.

Line charts have application when two or more trends are being compared. For example, comparing closing prices for two or more companies, or for a company compared to an index, is instructive as a form of specialized analysis.

Structure: The line chart includes two axes. The horizontal axis (the x-axis) is a time summary; and the vertical axis (the y-axis) reports value. Each axis is labeled accordingly. The time reported determines scaling, and the y-axis is scaled so that the range of data over the time period will fit within the area. For example, the line chart of China National Materials Ltd. Summarizes a series of daily lines connected to one another, reflecting each day's opening prices.



The shortcomings of this style of chart include:

a. The inability to see the range of each day's trading.

b. The lack of both opening and closing prices; a single line consists of either each session's opening price or closing price (this example is a series of opening prices).

c. Inability to spot volatility due to breadth of trading range.

<u>The OHLC chart</u>

An alternative to the line chart is the OHLC (open, high, low, close) bar chart. In this type of chart you have vastly more information. You can tell each day's range of trading and spot the high and low levels. The vertical extent of each session's bar also reveals the breadth of trading for that session.

This OHLC chart is based on the same data as the line chart, but with greatly improved levels of information. Here you can spot not only the trend (which is all you get with the line chart), but much more:

- each day's high-low trading range, represented in the extent of the vertical bar.
- each day's open and close, represented by the small horizontal bars on the left (open) and right (close of each session's vertical bar.
- direction of trading, found by observing whether the close is lower (declining) or higher (rising) session.

The candlestick chart

The most informative of all charts is the candlestick chart. It reports all of the same information as the OHLC, but with greatly improved visual features. This makes it easy to spot trends as well as specific reversal signals.

Each session on a candlestick chart includes:

- Direction of trade (white candles indicate upward movement and black indicate downward movement
- Opening and closing prices. The bottom border of the white rectangle is the open and the top border is the close; the top border of the b lack rectangle is the open and the bottom border is the close.
- The complete trading range. The day's high and low are represents by the extent of upper and lower shadows, extensions from the rectangle on either side or on both sides.

On the candlestick chart, you can very quickly spot upward-moving days by their white candlesticks; and downward moving days by their black candlesticks. So this enables you to glance at a long-term chart and immediately tell how price behaved on each session as well as within the longer trends.

Candlestick patterns, especially for reversal, are easily spotted. For example, on May 29 and 30, a very clear, strong bearish signal appeared. The *bearish harami* is a two-session reversal signal consisting of a white (upward-moving) session, followed by a black (downward-moving session). The first session's trading range exceeds the second, both above and below. In Japanese, *harami* means "pregnant," a reference to the protrusion of this second session, making the indicator easy to spot.

* * *

The three types of charts – line, OHLC, and candlestick – are all based on the same data but provide increasingly better levels of information. When combined with additional technical signals for confirmation, these charts (especially the candlestick) can help to better anticipate developing price patterns and the likelihood of reversal.

The technical ideal is not to eliminate poor timing of entry or exit, but to improve the likelihood of better timing. No system provides complete certainty. However, with the information you gain from studying charts, and confirming the developments that appear to be occurring, you do raise the likelihood of better entry and exit timing.

Segment 3. Chart properties: time scale, price scale

Charts come in many different types. Beyond the distinctions of line, OHLC and candlesticks, charts may employ varying time and price scaling systems.

A majority of chartists will prefer using linear charts, meaning that the price increments and time increments remain consistent throughout the period charted. For example, a two-point move will be one-half the size of a four-point move; and the increments of time are applied equally for every session.

Price scales may also be expressed and charted in semi-log, logarithmic, or *Kagi* formats.

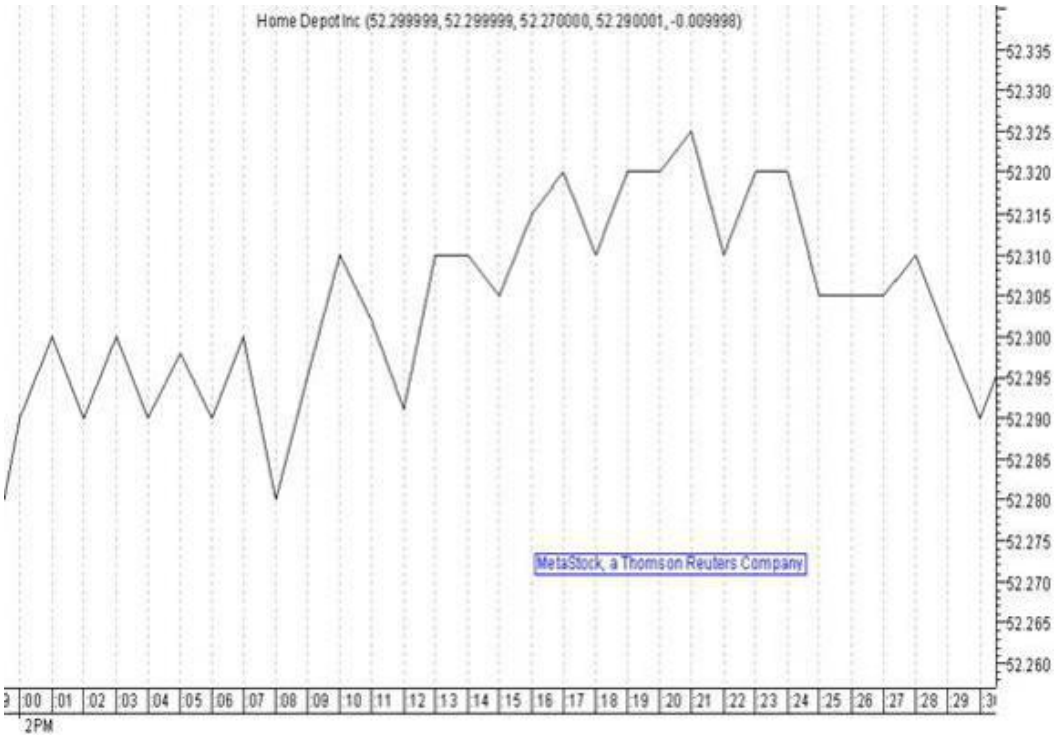
Time scale

Time scales can be designed in any increment; under the linear charting method, all time and price data are given equal weight and distance. Thus, a one-minute chart will report sessions beginning and ending each minute; and a daily chart will report opening and closing values for one session per day.

All technical indicators work equally well no matter what time increments are employed. So you will recognize and be able to act on a reversal indicator and its confirmation in a chart timed by the minute, just as you will with one showing daily, weekly or monthly sessions.

For example, Home Depot's one-minute chart shows 30 sessions of one minute each between 2:00 p.m. and 2:30 p.m.

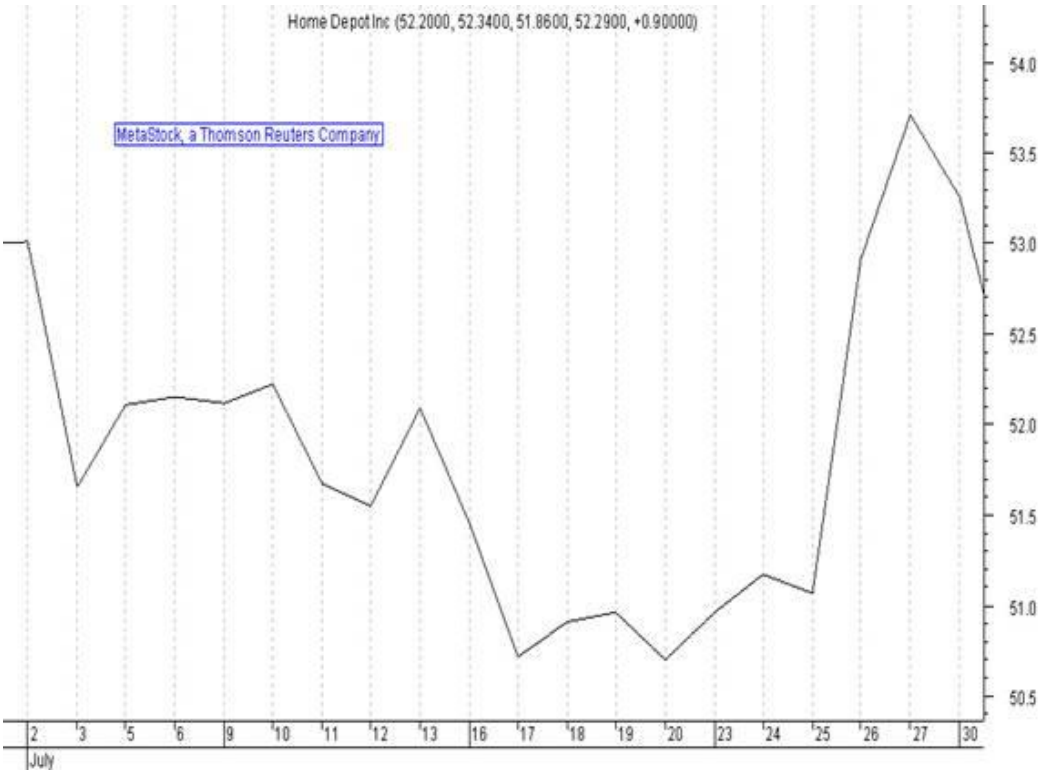
This chart might be informative for traders interested in spotting an overall trend minute by minute. Note the gradual rise in price peaking at minute 14 and then declining sharply between minutes 19 and 20.



A more popular version of charting is the daily summary. This is the version most chartist prefer to use, since the parameters are each day session from the open to the close. However, any single-line chart provides only one type of information. Most investors want to see the daily breadth of trading as well

The next chart summarizes Home Depot's price activity for the month of July, 2012.

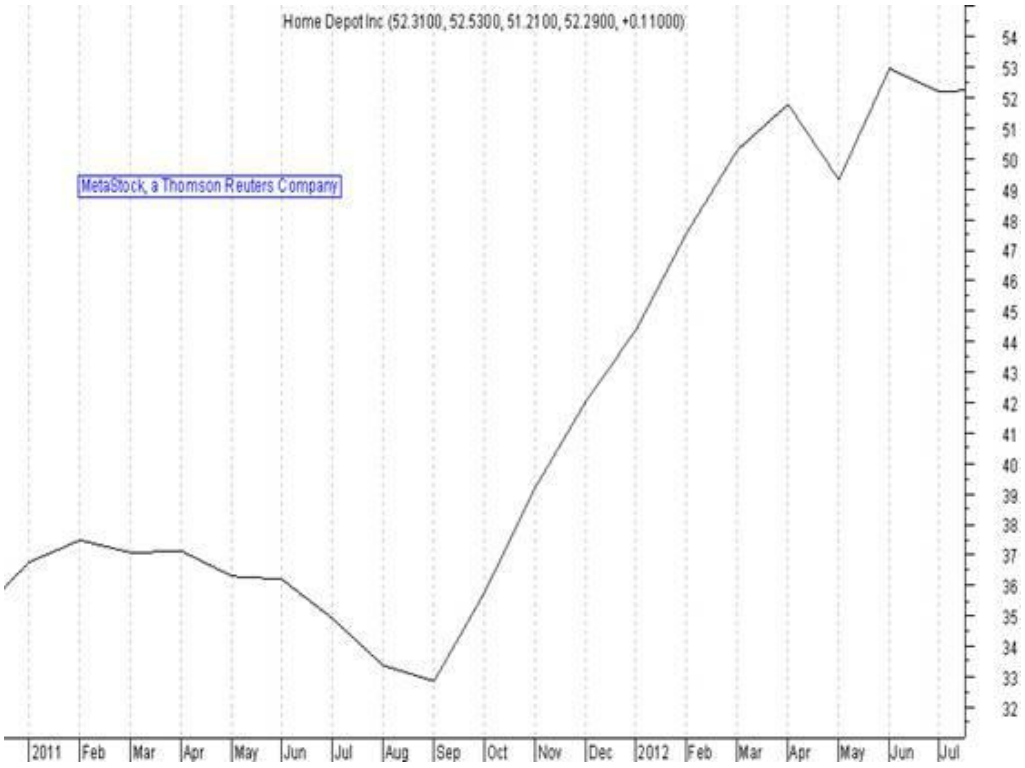
Monthly charts provide a long-term overview of a stock's trend. While monthly charts are not especially useful for a day-to-day study of technical trends and short-term price movement, they do provide a useful idea of price movement over the long term and how volatile it has been.



The next chart summarizes approximately 18 months of price history for Home Depot. As with all line charts, this provides broad information but no details.

Technicians are likely to be more interested in a daily view of the price *range* and less interested over price history. Technical analysis is generally based on current prices; however, the monthly chart is useful for checking:

1. Timing of buying of swelling shares, based on how price has evolved over many months.
2. Long-term volatility levels.
3. Comparative volatility and price movement between two or more stocks.



In the modern environment with numerous free charting services available online, the candlestick chart has become the most popular format for chartists. In the past, before Internet service, construction of a candlestick chart demanded time. Today, these are easy to find and provide a wealth of information:

1. Opening and closing prices (horizontal borders of each session's rectangle).
2. Full trading range (extension from top of upper shadow to bottom of lower shadow).
3. Direction of trading (white in up days and black in down days).

The next chart reflects daily sessions for three months of trading in Home Depot (HD).

Price scale

In addition to time scales, price can also be scaled.

The majority of charting is based on linear price scaling. Each session's price range has a fixed vertical value based on a strict summary of that session, regardless of how sessions before or after have been valued. Thus, looking at a chart of many sessions, chartists are able to appreciate relative price breadth, and to spot:

- exceptionally broad or narrow sessions
- with big price gaps
- trends based on the same scaling information

A *semi-log chart* tracks the percentage of change from one session to another. This is a very specialized variation of charting and is useful for analyzing big market moves, especially in market-wide indices or benchmarks. However, if you are focused on analyzing a stock's price trends, a semi-log chart will not always reflect the evolving trends needed to time entry and exit.

The semi-log chart plots degrees of change between sessions rather than displaying a fixed value such as that found on the linear price chart. This provides a "degree of magnitude" of price change, rather than a fixed or uniform comparison between prices of different sessions. Semi-log charts are useful for:

1. The study of large market movements relative to prior price trends.
2. Single-stock price volatility over the long term.

3. Sector or market analysis comparisons between two or more sectors.

The scaling of a semi-log chart will not be equal, but exponential. Rather than pricing of 10, 20, 30 and 40, for example, a semi-log scaling system may be 1, 10, 100 and 1,000.

Scaling comparisons

Linear scaling provides many benefits for technical analysis:

1. It is familiar and scaling is widely understood.
2. Judging the significance of trends is reliable in linear charting.
3. Most technical indicators assume linear scale.

Disadvantages of linear scaling are:

1. Degrees of change do not necessarily get highlighted, depending on scale.
2. Scale is adjusted based on breadth, so that relative volatility (between two companies whose charts have dissimilar scaling) is not reliable.
3. Analysis of signal sessions (such as exceptionally large breadth of trading in a single session) might not be as important as it appears because scaling distorts it in relative terms.

Advantages of semi-log (or, logarithmic) scaling are:

1. Prices are reflected in relative terms, so degrees of change are prominent.
2. Big change appears large, but little change does not; this clarifies the nature of volatility for chartists viewing the long-term trend.
3. Distortions resulting from price scaling are absorbed and minimalized.

Disadvantages of semi-log scaling are:

1. When two or more sessions are approximately the same size, the change is not reflected on the chart.
2. Equal percentage plotting may cloak important technical developments, such as tests of resistance or support occurring with sessions of approximately the same breadth.
3. Virtually all technical indicators assume linear charting, so the significance of price patterns may be lost when using semi-log scaling.

The Kagi chart

Another charting system is the *Kagi chart*. This is a system developed in Japan in the 1870s to plot differences in supply and demand. The Kagi chart follows these principles:

1. When price rises above a previous high (representing increased demand) or falls below a previous low (representing greater supply), either the color or the thickness of the lines changes (in the following example, color is used instead of thickness).
2. The lines are vertical to reflect supply and demand, and are joined together by a series of horizontal connectors
3. Plotting of the chart follows a variable period, adjusted when the direction changes.
4. Direction is plotted when the trend reverses, usually once movement in an opposite direction exceeds 4%; this tends to even out short-term volatility.

The next chart summarized the monthly Kagi trend for Home Depot over approximately 14 months. The period of increased demand (green areas) occurred over most of the charted the period; and that the primary period of increased supply, or reduced demand, were found only during the first three months.

Note that as long as the direction remained the same, the Kagi time scale was monthly; but when it changed, the scaling reverted to different time counts. The scaling represents percentage of change rather than price. The change from supply to demand dominance is set assuming a 4% level.

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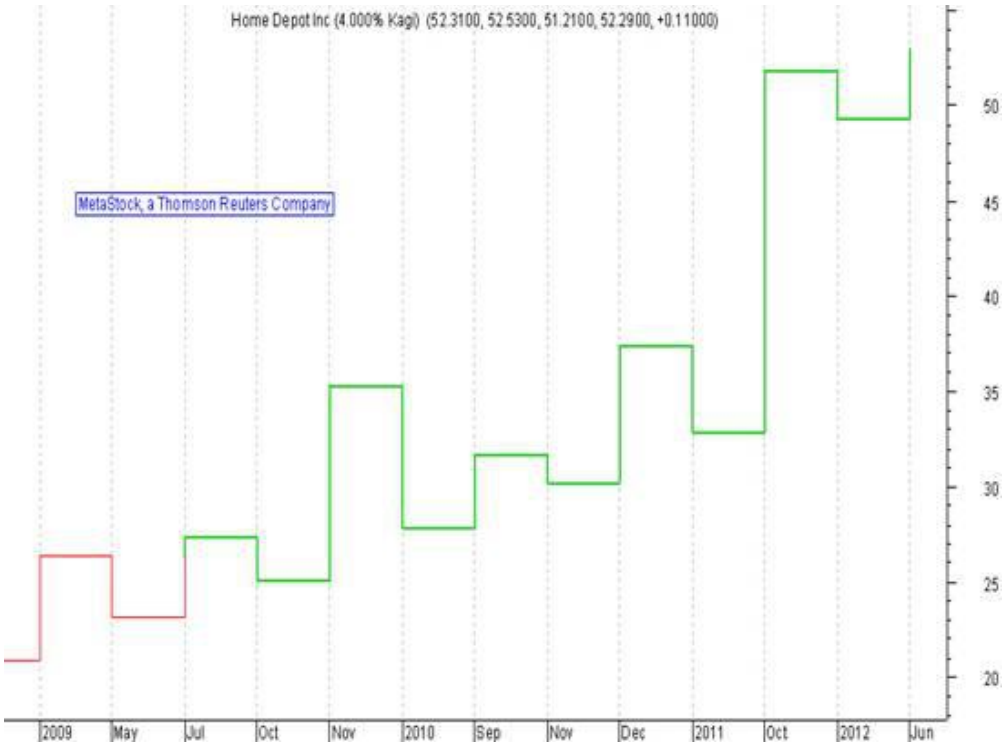


The variety of charts gives technical analysts a range of selection choices. Automated access via the Internet makes charting an easy matter. Price movement can be plotted using more than one system, and it is possible to gain insight by pursuing comparative analysis of the same price and time information using different methods.

However, most technical analysts will ultimately prefer linear pricing and timing for reliability and application of indicators; and will be likely to select candlesticks over line or OHLC charts, if only because the visual advantages of candlesticks are so much greater.
The difficulty of using semi-log charts is that, as the name implies, these are only partially logarithmic. A purely logarithmic system would be based strictly on degrees of change exponentially plotted *and* exponentially time based on degree of change. This would distort the ability of technicians to apply well-known and highly reliable technical signals.

Candlestick charts are assumed to be linear unless otherwise stated. In this format they provide the best venue for technical study of price movement, momentum, trends, and moving averages. Being able to combine these features with a broad view of each session's breadth of trading is the most practical system of technical analysis.

Segment 4. Chart patterns in Western technical analysis

Chartists seek out *patterns* in price; changes in volume; and growth or decline in momentum. All of these short-term changes appear in the form of patterns. Price patterns are prominent in Western technical analysis.

This section explores the most popular and recurring types of price patterns used in technical analysis to anticipate price direction and reversal.

Resistance and support

The basis for short-term price analysis is the trading range, the price area and breadth in which trading occurs. The breadth of trading, or distance from top to bottom, defines levels of volatility.

The degree of volatility in a stock is relative. So if the price level varies between only two points historically, and the breadth increases to four points, that is twice the volatility. If price levels have ranged between six and eight points, and that level declines to four, it is much lower volatility.

Two price levels define the trading range:

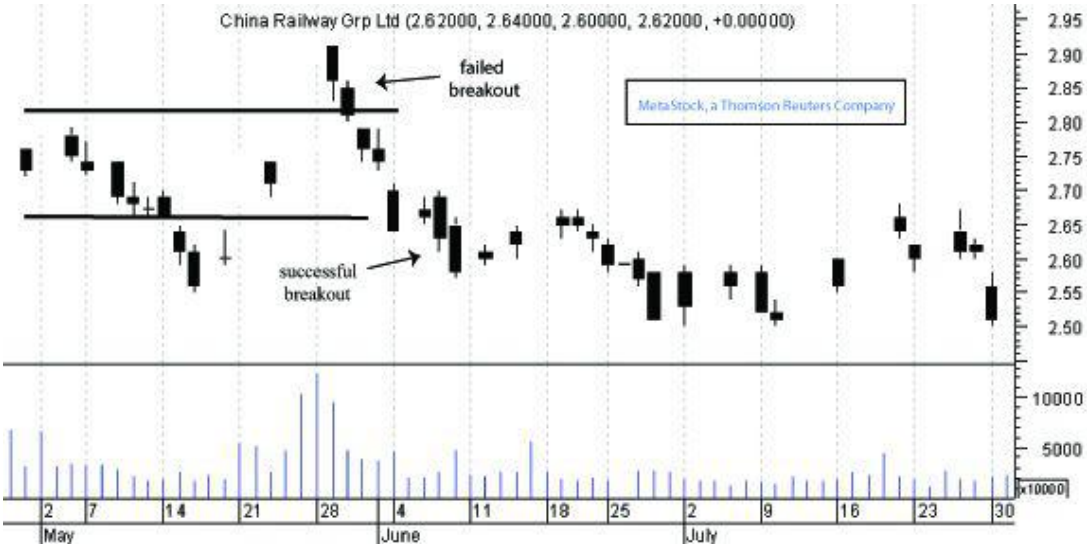
1. *Resistance* is the top of the current trading range. This is the highest price sellers are willing to pay for shares of stock. At this price, selling activity is active enough to keep price from rising and further.
2. *Support* is the bottom of the trading range. This is the lowest price sellers are willing accept for shares of stock. At this price, demand is assumed to be strong enough to keep the price from falling any lower.

Resistance and support may be level, rising or falling. For example, the chart for Air China includes examples of all three patterns. The first is a rising range, defined as a series of higher high prices and higher low prices, but with the same breadth.

Second is a declining trading range, with both resistance and support declining but maintaining the same approximate breadth of trading.

Finally, at the end of the chart prices leveled out so that resistance and support both moved sideways while also retaining the same breadth of trading.

Resistance and support are the borders of the trading range. Eventually, however, price levels will move above resistance or below support. A breakout may result in price retreating back into the previous trading range; or price may continue to rise above resistance or below support to set up a new trading range.



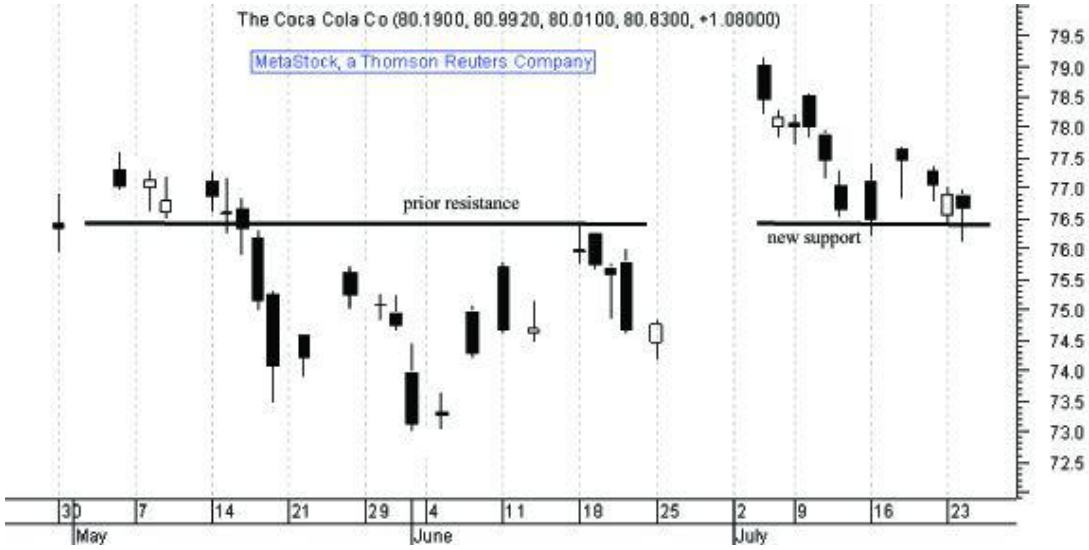
For example, China Railway experienced a failed breakout above resistance; prices moved above and then quickly retreated back into the established trading range.

A failed breakout such as this is likely to result in prices moving in the opposite direction. In this case, prices moved down so strongly that they broke through support and succeeded in remaining lower. This set up a new trading range with lower resistance and support, and about the same breadth of trading.

An interesting pattern often found with breakouts is called the *flip*. A previous level of resistance becomes the new support level as prices move higher; or the

previous level of support becomes the new re4sistance level after a downward breakout.

For example, Coca Cola went through a period in which price levels broke through resistance and established a new, higher trading range. The previous resistance price became the new support price.



Head and shoulders

A very reliable pattern technicians look for is called *head and shoulders*. This is a price pattern with three distinguishing characteristics: three peaks, with the middle (the head) higher than the first and third (shoulders).

Con Ed experienced such a pattern in its chart. The important aspect of head and shoulders is that once technicians spot it, they expect prices to decline. The triple attempt to drive prices higher has failed, so this translates into lost momentum among buyers.

The head and shoulders can happen on the downside as well. The *inverse head and shoulders* consists of three low points. The middle (head) is lower than the first and third (shoulders); and like the top-side version, prices are expected to then move in the opposite direction, upward.

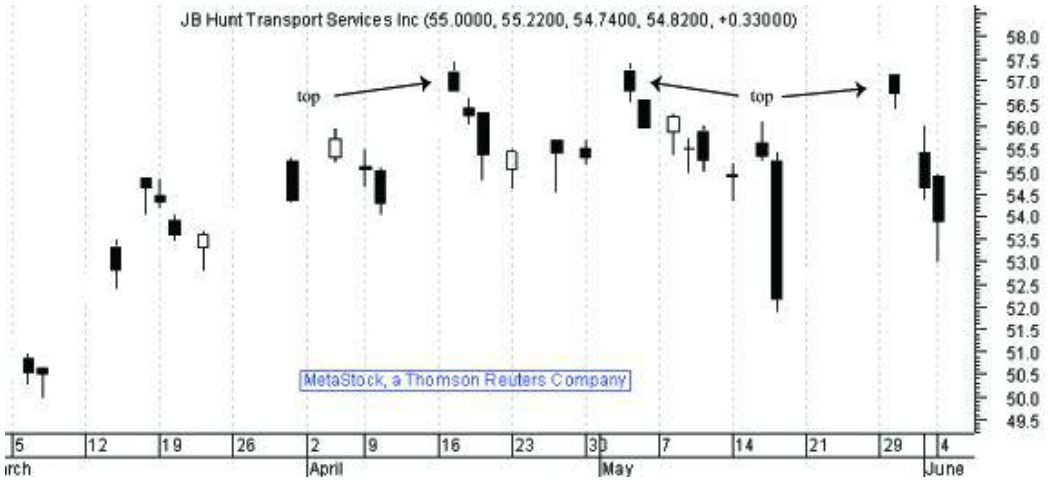
The chart for Exxon Mobil provides an example of the inverse head and shoulders pattern. After it develops and sellers were unable to drive prices lower, the trend reversed and began moving upward.

Tops and bottoms

The head and shoulders is a recognizable pattern testing resistance on the top or support on the bottom. Other patterns also test the borders of the trading range.

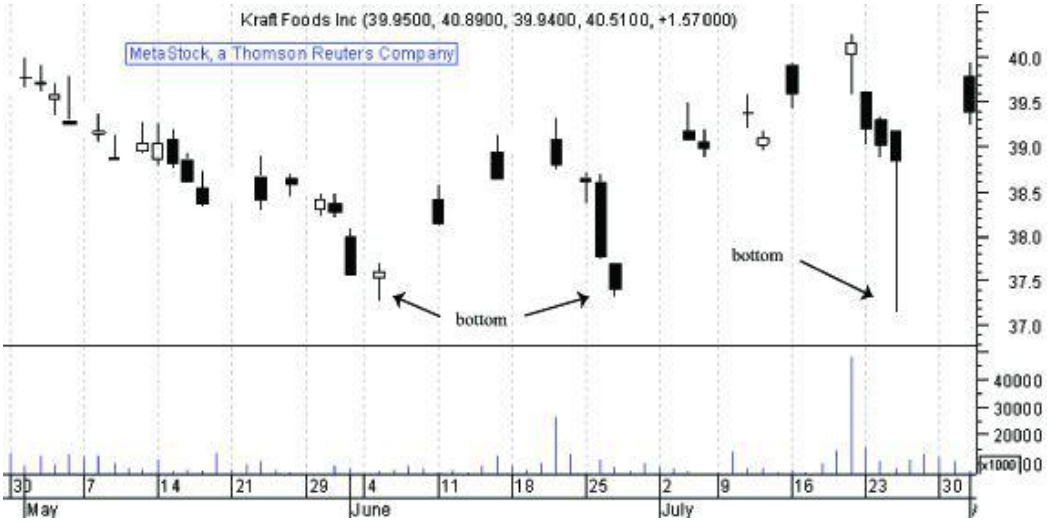
Double or triple tops and bottoms are recurring peaks in price that approach the edge of the range. Failing to break through, price then is expected to move in the opposite direction.

The chart for J.B. Hunt Transport experienced a *triple* top before prices began to decline. This was a signal that buyers were not able to break through the price of $56-57. After several attempts, the sell-side took over momentum, moving prices downward.



Double or triple bottoms occur with the same rationale: sellers are trying to move prices lower but the attempt fails. Then buyers take over momentum.

For example, Kraft Foods had three bottom prices during June and July, 2012. After failing to break through below the $37-38 price level, Kraft's price began trending upward.



Flags and pennants

A flag is a counter-move in the current trend, usually of very short duration. The breadth of trading does not change, but soon after the flag develops, trading then resumes. Flags are continuation patterns rather than signals of a coming reversal.

For example, AT&T was in a long-term uptrend between May and August, 2012. However, three consecutive flags occurred between mid-June and the end of July. All were approximately the same breadth of trading. But once they were completed, a large price gap followed and the uptrend continued.

Flags also occur during downtrends, when the flag would consist of a momentary uptrend of a few sessions.

A pennant is like a flag in the sense that it also is a continuation pattern. But whereas the flag's range is consistent, a pennant's declines. For example, over nine months, the chart for Intel was characterized by a series of pennants, both upward and downward.

The first two cases both occurred as disruptions of an existing uptrend. Note that as soon as the pennant closes, the uptrend continues. The third pennant is an upward-moving short trend during the current downtrend. In each case, the pennant's range closes right before the established trend continues.

Triangles and wedges

Developing signals whose ranges close up provide important intelligence for chartists, enabling them to anticipate coming price trends, both continuation and reversal.

Triangles are found in three distinct shapes. A symmetrical triangle may be either a continuation or reversal pattern and among the types of triangles, this is the most difficult to interpret. Chartists have to rely on confirmation signals to

decide what the symmetrical triangle means. It consists of lower highs and higher lows, with the trading range shrinking and converging to the point where a trend will take over.

For example, Yahoo's chart went through a strong symmetrical triangle pattern toward the end of July. Notice how the pattern shrinks and then prices breaks into a new trend. It appears from this pattern that an uptrend follows; but there is not enough history to be sure.

An ascending triangle is a bullish signal. It consists of equal highs and a series of higher lows. For example, the chart of Apple created a clear ascending triangle with resistance at the top and a rising support level. As the triangle concluded, prices jumped above established levels.

A descending triangle is a bearish signal, consisting of level low prices and a series of declining high prices. One example was the chart for Chevron, which began with a very strong descending triangle.

The meaning of this pattern is bearish, as evidenced by subsequent price movement. Even though the price levels jumped above the declining resistance points, the established support was soon violated. The lower trading level continued for the month of May, before prices began a strong uptrend in June and July.

A similar pattern to the triangle is the *wedge*. The distinction is that while triangles tend to have fixed resistance or support, the wedge experiences movement on both sides. A rising wedge is made up of higher highs and higher lows, and is bearish. A falling wedge is bullish and is made up of lower highs and lower lows.

For example, the chart for Tsingtao Brewery had one rising wedge and two falling wedges. The rising wedge accurately predicted a coming price decline. However, neither of the falling wedges was reliable; they signaled possible uptrends, but in both cases these did not develop. This set of failed signals makes the point that you can never rely on even strong signals 100% -- they are indicators, not guarantees.

<u>Gaps</u>

Another significant price pattern involves gaps. There are several types of gaps, and they recur frequently. The type with no special significance is called a *common gap*. A *runaway gap* occurs as a series when price movement occurs rapidly and strongly. The *breakaway gap* often occurs when price levels move above resistance or below support. In either case, prices may turn back into the established trading range, or continue to set up a new higher or lower trading range. An *exhaustion gap* is found as a signal ending a current uptrend or downtrend.

A chart containing numerous strong gaps is that of Procter & Gamble. Gaps are not easily to interpret, but when they occur this often, some signals can be taken from gapping price movement.

The first two look like common gaps because no important priced movement follows. However, the third shows up after a sustained downtrend and is probably an exhaustion gap. The fourth gap takes place within the subsequent downtrend. But the most interesting gaps on this chart were the fifth and sixth ones, both taking place is a strong uptrend and potentially identifying a runaway gap pattern. The final, seventh gap on this chart could signal exhaustion of the uptrend, especially as price levels stopped moving upward and were beginning to slide slightly.

Technical signals come in many shapes and sizes. These are some of the more popular of the technical signals. All signals require independent confirmation, however, by way of other technical signals, momentum indicators, or candlestick patterns.

PART 3: JAPANESE CANDLESTICKS

All chart types have the purpose of providing fast visual summaries of price movement. As primary technical tools, charts summarize price, volume, momentum, and averages of price developments.
Each chart's features include:

1. Price movement, including high and low as well as open and close.
2. Direction of movement over time for identification of short-term trends.
3. Anticipation of coming reversals based on tests and breakouts above resistance or below support.

Segment 1. What are Japanese candlesticks?

The candlestick is a form of reporting developed in Japan in the 17th century, to track price movement in rice futures. Candlestick charts identify specific price patterns that provide early indications of price movement including likely reversal.

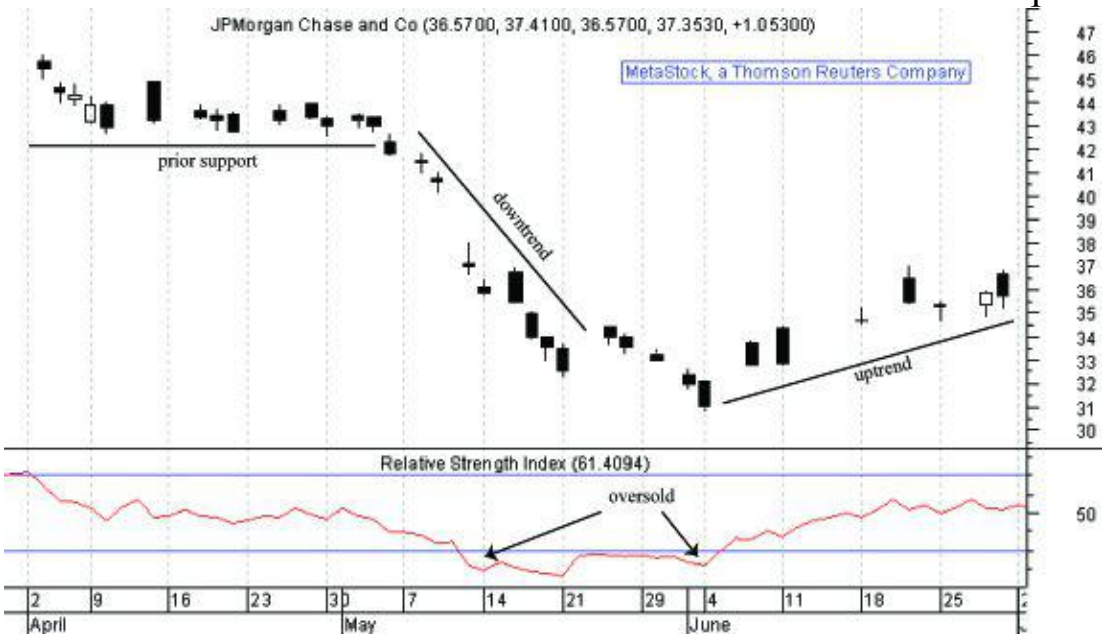
Candlestick indicators are found in single sessions, two consecutive sessions, or three or more sessions. The strength of indicators varies, but all reversal signals – candlesticks and others – should be confirmed independently by other technical signs. Some features add to the reliability of candlestick indicators, including:

1. Proximity to resistance and support. All technical signals are significant when confirmed by other indicators, or when occurring at key positions. Among these positions, proximity to resistance or support is the most important. Reversal is most likely to occur when price movement approaches these price levels. A failed breakout is likely to lead to price movement away from the resistance or support level. A breakout with strong gapping price action might also reverse; however, candlestick signals are excellent tools for identifying the possibility of reversal, especially when confirmed by momentum oscillators. For example, on Southern Company's chart, support is signaled to end by the one-session indicator called a hammer (consisting of a small real body and exceptionally large lower shadow). This proximity is so important because the hammer demonstrates the failure of sellers to move the price lower; this led to a

strong uptrend in coming sessions.

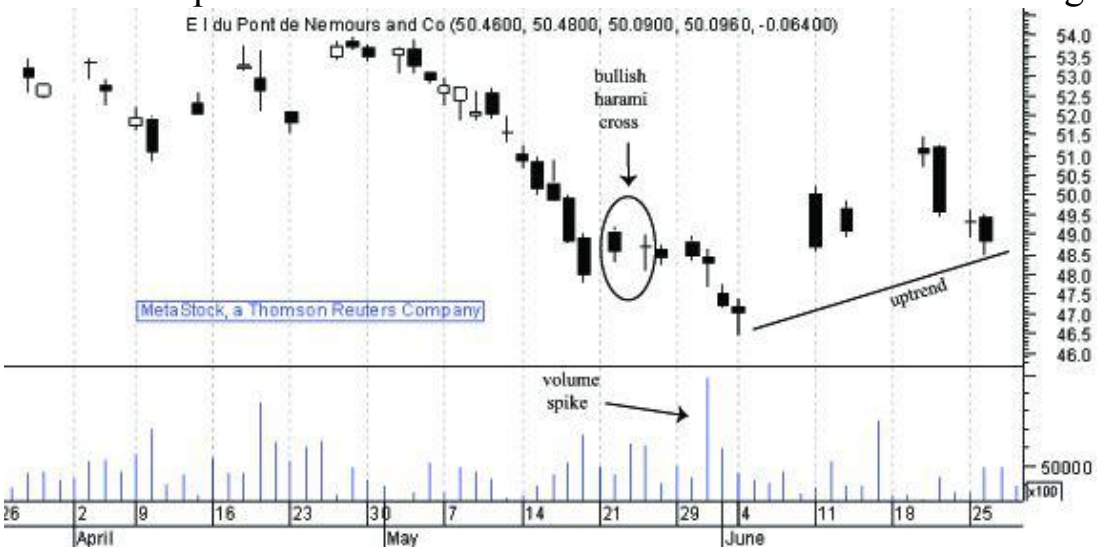
2. Volatility levels of the stock. Reversal is closely associated with the stock's level of volatility. Highly volatile stocks are difficult to predict; however, using candlesticks and independent confirmation is a sound method for using volatility to understand the likelihood of price reversal.
3. Strength of confirming price signals. Just as some indicators are strong while others are weaker, confirmation also is found is many degrees. A strong initial indicator accompanied by an equally strong form of confirmation, increases the likelihood of reversal.
4. Exceptionally strong confirmation from momentum indicators. Among the confirming indicators, momentum oscillators are perhaps the best and most reliable of all signals. These identify not only the direction of a trend on average, but also its strength and speed. Oscillators are tracked by index values; and when the value rises above a predetermined level, the stock is assumed to be overbought. When the index falls below a predetermined level, it indicates an oversold condition. Reversal of these extremes is highly likely, and this is the value in tracking momentum. Such indicators provide the most reliable forms of confirmation for candlestick reversal signals. JP Morgan Chase had a clear support level until news broke concerning the company's large losses in derivatives speculation. The question for traders was, How can you tell when the reaction downtrend had ended? The answer was found in Relative Strength Index (RSI), a

momentum indicator. Note the dip in the RSI line beneath the index value of 30. This reveals an oversold condition. The change from downtrend to uptrend was also seen in a strong upward-moving price gap after May 21, and another after June 4. At that same point, the RSI indicator moved back into the middle zone and marked the beginning of the uptrend.



5. <u>Spikes in volume.</u> The trend in volume accompanies price movement with high reliability. A volume spike is a reliable sign of coming reversal. When volume spikes in a single session (especially to the extent that it confirms a candlestick reversal signal), it makes the likelihood of price reversal very reliable. The DuPont chart provides an excellent example of this type of confirmation. The bullish harami cross is a two-session indicator consisting of a black (downward-moving) session followed by a doji (a session with little or no distance between open and close), with the second session range entirely within the range of the previous session. However, even though this is a bullish signal, price levels continued to decline for the next five sessions. The volume spike seen at the midpoint of this decline signaled that prices were about to reverse and move upward. This

volume spike confirmed the bullish candlestick signal.



6. <u>Crossover and convergence (or divergence) in moving averages.</u> Moving averages are tracked in many forms, and among the favorites are the use of two MAs at the same time. A 20-day and 200-day MA application is one of the most popular. The theory holds that each of these brings value to the anticipation of price movement. Convergence and divergence of the two MAs as well as crossover points (when MA crosses price) are valuable signals of changes in the price direction. As confirmation tools for candlestick signals, MA analysis provides great value. The Japanese candlestick is a means for spotting the likelihood of price direction and change. Some indicators are continuation patterns, but the greatest interest is focused on candlestick *reversal* signs. Technical traders seek early clues that price is about to reverse due to price pattern changes, slowing momentum, and moving average trends.

Segment 2. Features: open and close, high and low, price direction

The candlestick provides a wealth of information to traders.

When reviewing a chart for a period of time, candlestick formations are easily spotted. Trends, acceleration of price movement, and volatility are all made visual.

Value in candlestick analysis

Candlesticks work well for technical analysis, because they compliment other forms of price study. The specific reversal indicators in the form of one-session, two-session or three-session patterns help to:

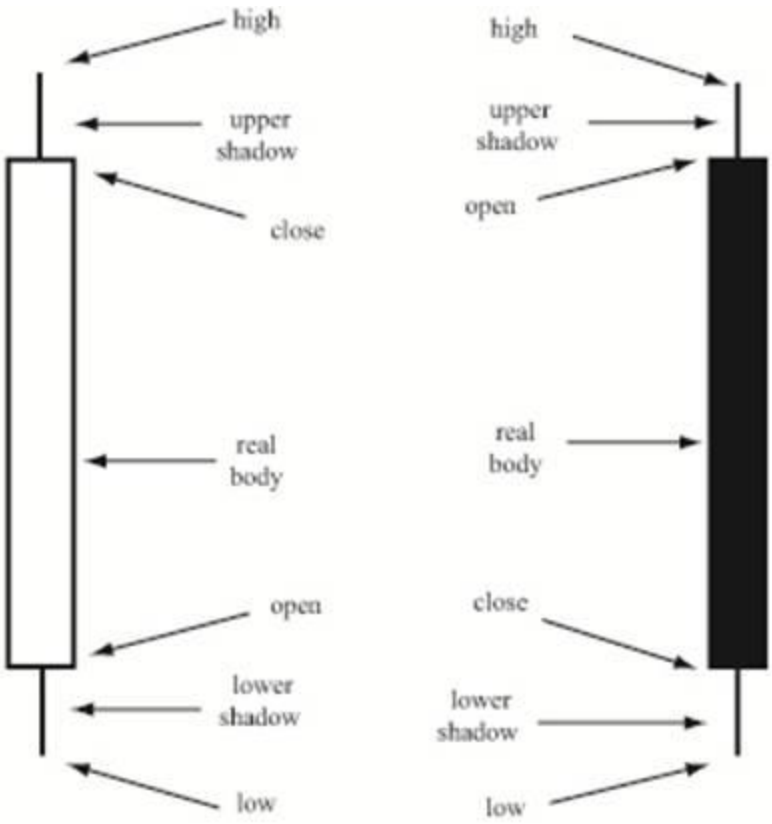
1. Support (or contradict) other candlestick indicators.
2. Identify periods of consolidation and uncertainty, as well as the end of such periods and the beginnings of new trends.
3. Look for exceptionally strong signals at or near resistance and support.
4. Determine whether breakouts will lead to new trading ranges, or retreat back to the previously set trading range.

Features of the candlestick

Candlesticks contain all of the information about a single session that analysts require. This information includes:

1. Direction of price movement. An upward-moving session is represented by a white "real body" (the rectangular center); and a downward-moving session is represented by a black real body.
2. Opening and closing price. The rectangle (real body) defines opening and closing prices for each session. The horizontal lines serve this purpose. On an upward-moving (white) session, the opening price is the bottom line and the closing price is the top line. On a downward-moving day (black), the opening price is the top horizontal line of the rectangle, and the closing price is the bottom line.
3. Trading range of the session. It often occurs that trading within one session occurs above and below the open/close range of trading. The full range is represented by sticks appearing above and below the real body. These are termed "upper shadow" and "lower shadow" and also are called wicks or tails.

The candlestick and its features are summarized in the figure.



Candlesticks in confirmation

The value of candlesticks for spotting reversals is a primary advantage. However, timing of entry and exit demands independent confirmation.

Candlestick formations provide reversal signals, but should also be confirmed. The specific confirmation may be made with:

1. Other candlestick formations.
2. Volume indicators or single-session spikes.
3. Momentum oscillators, notably as they move into overbought or oversold territory.
4. Western technical indicators (tops and bottoms, head and shoulders, gapping price movement, and many other patterns).

Proximity of candlesticks

Candlestick indicators are most significant when they are found at or near resistance or support.

These borders of trading ranges may be challenged by price movement. Some rules of these challenges include:

1. Success or failure. Candlestick indicators may reveal whether a breakthrough will succeed or fail (a reversal indicator occurring at the point of breakout is strong evidence of a failed breakout).
2. Opposite movement. An attempted breakout that fails often is followed by price trending in the opposite direction. Candlesticks may confirm this coming price movement.
3. Confirmation of success. Price breakouts that succeed often are confirmed with candlestick continuation patterns.
4. The flip. Price breakout that establishes a new trading range may include a flip between resistance and support (prior support becoming new resistance with a breakout through the bottom; or prior resistance becoming new support with a breakout through the top).
5. Flip confirmation. Support and resistance flips may be confirmed with subsequent candlestick patterns.

Segment 3. A short list of candlestick signals

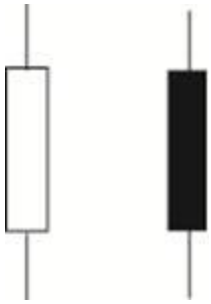
Dozens of candlestick indicators provide continuation and reversal signals. Among these, this section displays and explains a few of the better-known indicators.

Long candles

The first notable candle formation is a single session. The *long candle* may be upward-moving (white real body) or downward-moving (black real body). A long session is important because strength of trading is greater when the distance between open and close is more than the typical trading session.

The "long" nature of this session is relative. For example, when a chart is set in increments of ¼ of a point, a two-point move is quite long. When a chart is set in 10-ponit increments, that same two points is relatively short.

Chart intervals are set based on the time period and trading range. As a stock's prices expand, the incremental spaces are broadened so that all of the trading activity will fit on the chart. For this reason, it is not accurate to compare a "long" session for one security to that of another whose incremental pricing is different.

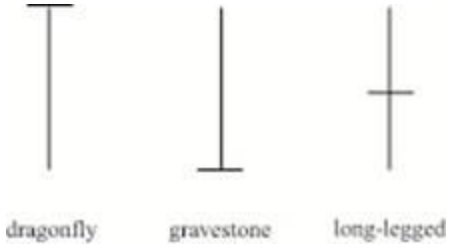


This may be either a reversal or a continuation indicator, depending on where it appears:

1. A white long candle appearing within an uptrend is a continuation indicator.
2. A white long candle appearing within a downtrend is a reversal indicator.
3. A black long candle appearing within an uptrend is a reversal indicator.
4. A black long candle appearing within a downtrend is a continuation indicator.

Doji patterns

Just as exceptionally long sessions are significant, so are exceptionally short sessions. The shortest possible session is the *doji*. This is a Japanese word meaning "mistake," and it appears as a horizontal line instead of a rectangle. This reveals that the session's opening and closing prices were the same or very close.



A doji can be bullish or bearish.

A dragonfly doji is bullish and contains only a lower shadow, revealing that sellers attempted to drive price lower, but did not succeed.

A gravestone doji is bearish and has only an upper shadow. This shows that buyers tried to drive the price higher, but that attempt failed.

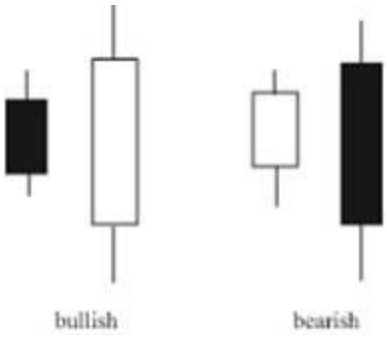
A long-legged doji has both upper and lower shadows, revealing that both buyers and sellers tried to control price direction, and both failed. This is a reversal pattern that relies on the current direction. When it appears in an uptrend, it hints at a coming downward reversal; when it is found in a downtrend, it hints at a bullish reversal.

Engulfing pattern

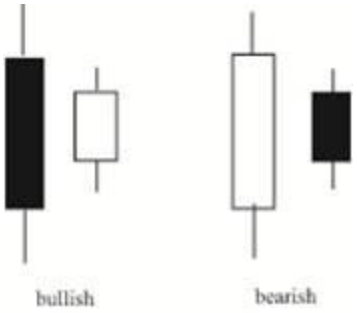
A pattern appearing often is the *engulfing pattern*. This is an especially strong reversal signal.

The bullish version consists of a black session followed by a white session whose real body extends both above and below that of the prior session (engulfing it).

The bearish version consists of a white session followed by a black session whose real body extends both above and below that of the prior session (engulfing it).



Harami



The word *harami* means "pregnant" in Japanese, and this describes the protrusion of the second session in this two-session indicator. Its formation is opposite that of the engulfing pattern.

The bullish harami begins with a black session and is followed by a white session whose open and close are found completely within the range of the prior session.

The bearish harami begins with a white session and is followed by a black session whose open and close are found completely within the range of the prior session.

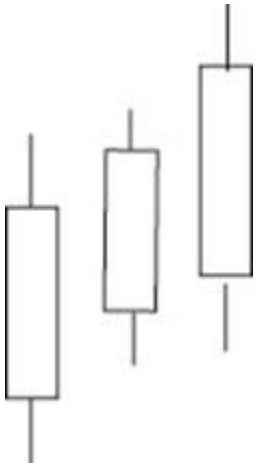
Hammer and hanging man

This is an interesting one-session indicator, for two reasons. First, it does not matter what color the real body contains. Second, it may be either bullish or bearish, depending on whether it appears at the top of an uptrend (bearish reversal) or at the bottom of a downtrend (bullish reversal).

The fairly small real body (of either color) also contains a lower shadow that is larger than the extent of the real body.

The bullish version appears at the bottom of a downtrend; it is calling a *hammer* and foreshadows a reversal and uptrend.
The bearish version appears at the top of an uptrend; it is calling a *hanging man* and foreshadows a reversal and downtrend.

Three white soldiers



These are three-session patterns that may constitute either continuation or reversal.
The rule for the three white soldiers is: each session has to open higher than the open of the prior session, and also has to close higher.
These are most often reversal patterns (meaning the three white soldiers is expected to conclude a downtrend, signaling reversal). In fact, these are reversal signals about 80% of the time.
However, they may also be found as continuation indicators:

1. Three white soldiers appearing within a downtrend is a reversal indicator.
2. Three white soldiers appearing within an uptrend is a continuation indicator.

Three black crows

These three-session indicators may be either reversal or continuation signals.

The rule for the three black crows is: each session has to open lower than the open of the prior session, and also has to close lower.

These are most often reversal patterns (meaning three black crows are seen at the top of an uptrend, signaling reversal). In fact, these are reversal signals about 80% of the time.

However, they may also be found as continuation indicators:

1. Three black crows appearing within an uptrend is a reversal indicator.
2. Three black crows appearing within a downtrend is a continuation indicator.

* * *

Dozens of candlestick indicators are used by chartists to analyze price patterns, spot reversal or continuation, and serve as confirmation for other indicators. This section has only highlighted some of the more popular and recurring candlestick indicators.

Segment 4. Study of several candlesticks charts

This section provides examples of a select group of candlestick indicators introduced in the previous section.

Each chart includes highlighted signals showing what occurred after the signal appeared. This is intended to show how successful indicators are applied; however, no indicator should be expected to ensure such movements all of the time. Every indicator has a percentage of failures, so confirmation is always a key in addition to finding strong signals.

Long candles

Paychex went through a period of small price movements in both directions for the months of May and June. The highlighted long candle was important for several reasons:

1. A gap occurred both before and after the session, both in upward direction.
2. A bullish harami preceded the long white two and three sessions earlier (black candle followed by a smaller white); this was an additional bullish signal.
3. The long white candle was the most bullish variety, called a *white marubozu* – distinguished by lack of upper and lower shadows.

Long candles also appear in anticipation of downtrends. Cisco systems was such an example. Although the highlighted long candle was not extremely long, it was larger than sessions before and after. It also led to a month-long downtrend, highlighted on the chart.

Doji

The doji comes in three primary examples. The dragonfly is bullish; the gravestone is bearish; and the long-legged is a reversal that can be either bullish or bearish, depending on where it appears within a current trend.

The chart of Pearl Oriental began with a small but important dragonfly doji. This is an example of a *failed* indicator. The dragonfly is bullish; however, it only acts as a reversal about half the time; the other half, it may be part of a downtrend, as shown in the example of Pearl.

Although the doji is generally a strong indicator, a 50% reliability makes it practically useless. You would expect it to act bullishly since the lower shadow represents a failed effort by sellers to move price lower.

The 50% performance reliability has to be kept in mind, since that is not enough to spark a trade, even if confirmation is located.

The gravestone is a bearish doji, as shown in the chart of China Glass. This indicator, likes its opposite dragonfly, is a reversal signal only half the time, making it equally unreliable. In this example, it did lead to a downtrend.

One way to judge this gravestone is by the unusually long upper shadow. The longer the shadow, the stronger the meaning. In this case, buyers lost momentum in an effort to drive the price higher.

Compared to the very small lower shadow of the dragonfly doji in the previous example, this longer upper shadow is a better indicator of coming reversal.

The last type of doji is the long-legged variety. This contains both upper and lower shadows and its meaning depends on where it is found in the trend. Like the other types, this leads to reversal only half of the time.

However, in the example of General Electric, the upper shadow is quite long. Like the gravestone example, this long upper shadow is a sign of lost momentum among buyers. This makes the long-legged doji a likely bearish reversal signal.

This is especially true not only due to the long upper shadow, but also as a reaction to the very large upward price movement preceding it. That was an exaggerated trend, so a reversal should have been expected. Once the long-legged doji appeared, a downtrend seemed more certain.

Engulfing

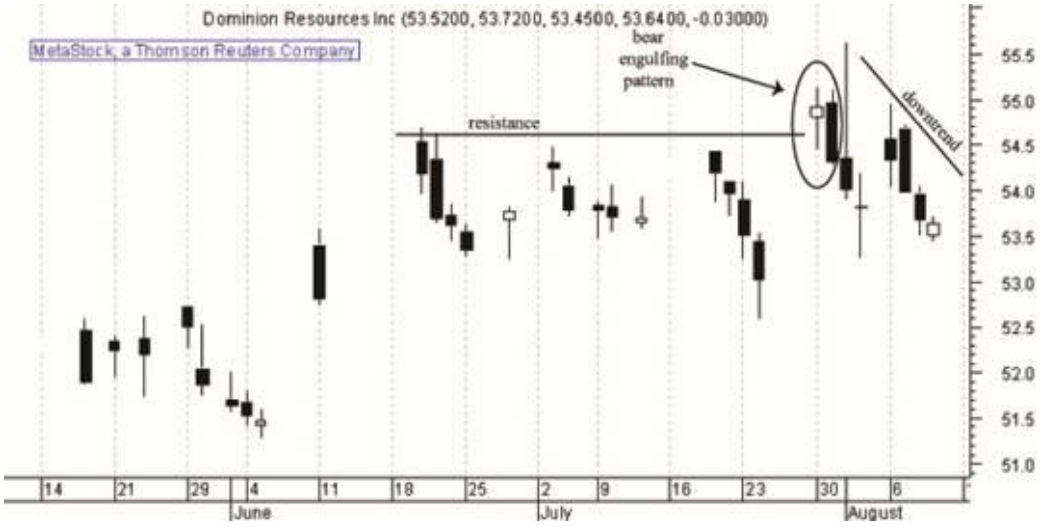
The engulfing pattern is found often and is highly reliable. The bullish reverses more than 60% of the time, and the bearish reverses about 80%. That is a high degree of reliability.

The chart of Altera Corporation experienced two bullish engulfing patterns in a five-session time span. This is an example of strong confirmation; however, it is unusual.

The proximity of two of the same candlestick patterns should not be expected to occur often. This makes the example exceptionally strong. It accurately predicted the strong uptrend that followed.

The bearish engulfing pattern in Dominion Resource's chart was a good example because it was confirmed in several ways:

1. The breakout above resistance was followed immediately by the bearish engulfing pattern, making reversal very likely.
2. The session following the engulfing signal had an exceptionally long upper shadow, indicating lost momentum among buyers.
3. Proximity to resistance (and the breakout) added strength to the bearish indicator, making the resulting downtrend a near certainty.



Harami

The harami acts as a reversal signal, but only about half the time. This makes it as unreliable as the preceding doji indicators – unless the harami appears with exceptionally strong confirmation.

Staples had an example of strong confirmation. Two bullish harami indicators showed up in a five-session period. It anticipated a strong uptrend for the following two weeks.

The bearish harami is equally unreliable as its bullish counterpart – reversing only half the time.
However, in the chart of MMM, there was a special circumstance that made the bearish harami exceptionally strong and a likely case of reversal. The price rose so rapidly and peaked with the bear harami.
When a reversal indicator appears at the very top of a chart, it adds strength. This was not an easy situation to interpret, however. The preceding trend was sideways after a brief uptrend; so the bearish indicator was not especially strong. It did lead to a downtrend, however.
Based on the low occurrence of reversal for the harami, this example would not have provided enough information to act on it. Before anticipating a downtrend, it would make more sense to look for independent confirmation from volume, momentum indicators, or other signs.
The fact that this occurred at (and slightly above) resistance adds a degree of strength to the bearish signal. All reversal indicators occurring at or near resistance or support should be taken seriously because reversal is more likely there than anywhere else on the chart.

Hammer and hanging man

The hammer and hanging man are single-session indicators that are unusual for two reasons:

1. The color of the real body does not matter.
2. The significance depends on whether it appears at the bottom of a downtrend (hammer) or the top of an uptrend (hanging man).

Both of these are reliable as reversal signals about six out of 10 times, making them better than random, but not by much. Before acting on these, independent

confirmation should be located.
The hammer appeared in the chart of Peet's Coffee & Tea. It was strengthened to a degree by the preceding downtrend. The frequency of doji sessions indicated more than average uncertainty among both buyers and sellers.
Due to this uncertainty, a trader might have given weight to the hammer to a greater degree than its appearance elsewhere. However, without confirmation, it would not have made sense to act on the hammer by itself.

The hanging man is equally weak as a reversal signal, working 60% of the time. Confirmation is essential before acting upon seeing the hanging man.

The chart of Dell was exceptional for a few reasons:

1. The entire chart consisted of very narrow trading sessions, all at or below one point between open and close.

2. Two hanging man sessions appeared nine sessions apart. Unfortunately, both were very weak, seen by the small lower shadows.
3. The following large downward gap was a significant three-point change, especially considering the small range of trading in each session throughout. However, this gap could not have been anticipated from the two hanging man indicators. They were not strong enough to anticipate such a surprising fall in price.

Three white soldiers

One of the easiest indicators to spot is the three white soldiers, consecutive sessions of three (or more) upward-moving prices. The ideal three white soldiers consists of each day opening within the range of the prior day, and then closing higher.

This is one of the strongest of all reversal signals, with an 80% reliability history.

The chart of Expedia contains three examples of the three white soldiers:

1. The first appears after a very large upward price gap. The immediate appearance strongly suggests that price will not drop back to previous levels.
2. The second suggests that after a 2.5-month sideways trading pattern, the price is about to rally to the upside.
3. The third example follows a price gap very similar to the first. It confirms the hint in the second indicator that an upward movement was coming; it also adds assurance that the newly set higher price level will not retreat.

Three black crows

This is the bearish counterpart to the three white soldiers, a bearish version that is also reliable 80% of the time. It consists of three consecutive downward-moving sessions, each opening within the range of the previous session and then closing lower.

The chart of The Travelers is a good example of how the three black crows appears. A strong uptrend leveled out, meaning the next move was uncertain. The appearance of the three black crows settled the question.

Even though price again hesitated and moved sideways after the three black crows, the trend was clearly bearish.

PART 4: TRENDS

Segment 1. Why do prices trend?

The nature or prices is to move in one direction for as long as momentum carries it; and to then use up momentum, pause, and reverse.

Inertia is an aspect of momentum. When prices trend in one direction, inertia works to keep it moving for as long as the momentum is sustained. Once momentum is exhausted, the tendency is for prices to then trend in the opposite direction.

Chaos versus predictability

Why do prices reveal a level of predictability? Can price movement by volatile and impossible to predict? Some analysts – those subscribing to the random walk hypothesis – believe that price movement is random.

Technical analysts rely on technical signals found in a variety of forms (price, volume, and momentum) to predict change. If a trader does not believe in predictability, this is a futile effort. However, a scientific approach to trend analysis reveals strong historical reliability.

Most analysts agree that short-term price movement (swings) is highly chaotic and difficult to predict. Swing traders rely on over-reaction in short-term trading to exploit both emotional over-reaction and chaos. Longer-term trading science relies on momentum analysis as well as on price patterns and reversal signals.

Intermediate (reaction trends or retracements lasting between a few days and a few months) and long-term trends (lasting between several months and several years) are far more predictable than short-term price movement. Historical analysis of trends reveals predictability in the defining attributes of these trends as well as in their tendency to evolve.

Supply and demand -- and trending

A trend is the reflection of the current price dominance by either buyers or sellers.

Trends last until the side in control begins losing momentum. At that point, prices tend to level out and then to reverse. The other side then takes over and the trend moves in the opposite direction.

This has been observed from many statistical and economic points of view. The Dow Theory (expressed through several price, volume and momentum studies) is based largely on his trends develop, how long they last, and the signals that they are ending.

A market adage states that “the trend is your friend” but the complete adage is “the trend is your friend … until it ends.” This refers to the unavoidable reversal.

No trend continues forever. A tendency among traders is to ride the trend too far and, in fact, as it accelerates, to make decisions at precisely the wrong time.

Awareness of this tendency helps traders to think like *contrarians*. A contrarian is a trader whose decisions are made logically rather than emotionally. Trend analysis reveals that the greatest level of entry into long positions occurs at or near the top of an uptrend; and that the greatest level of selling occurs at or near the bottom of the downtrend.

This reveals the most important flaw in the "crowd mentality" of the market: The tendency is to buy high and sell low, when wise timing advises "buy low and sell high."

The statistical trend and how it levels out

Trends are predictable not only because they reverse, but also in the way this occurs.

An expected outcome following a strong trend is *retracement*, the tendency for prices to move against the prevailing trend. It is not a change in market sentiment, but an intermediate correction, assuming that the prevailing trend will resume after price retrace.

Retracement demonstrates that no trend continues without pause in one direction. It will move, retrace, and then resume.

A *reversal* is a change from sentiment, such as a bull market reversing to a bear market, or vice versa. A *retracement* is the normal adjustment of the trend as a temporary movement. How can you tell them apart?

Several techniques in price analysis help technicians to recognize the differences between retracement and reversal. Among these, two key indicators are Bollinger Bands and Fibonacci Retracement.

Bollinger Bands (named for the originator of the theory, John Bollinger) involves the use of three moving averages – high, medium and low.

The middle band is a weighted (exponential) moving average usually set over 20 trading sessions. The bands above and below are standard deviations from that average, a statistical calculation of likely price volatility.

Traders use this indicator in various ways. For example, a swing trader may buy when the low average is touched by price, and sell when the middle band is touched; or sell when price reaches the top and buy to close at the middle.

To many traders concerned with volatility (including options traders), the breadth between the three averages is representative of volatility levels. When close together, the trend implies low historical volatility; and as the breadth between the bands expands, volatility is thought to move higher. It is a visual method for identifying volatility and for timing both long and short trade entry and exit.

Bollinger Bands also serve as confirmation indicators when other signals are found, including candlestick reversals, momentum oscillators, and volume

signals.

The chart shows how the three moving averages interact with price. Note the narrowing of breadth toward the end of May, when price jumps out of its resistance. The breadth remains wide until the end of June, when it begins narrowing.

This reveals how multiple moving average analysis aids in timing of entry and exit. The trend is bullish, but once price exceeds the highest average, it is expected to level out. The first week and last two weeks of May were exceptionally volatile, demonstrated by price moving above the upper moving average.

Fibonacci Retracement is a method for determining the approximate number of points retracement will involve. Once the retracement occurs, traders expect the prevailing trend to begin once again.

Leonardo Fibonacci was a 13th century mathematician. He wrote *Liber Abaci* (1202) promoting the use of Arabic digits zero to nine for calculations of weights and measures, bookkeeping, interest calculations and other business applications. In the same book, he introduced what is now known as the *Fibonacci sequence*, in which each number is the sum of the previous two numbers:

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144 ...

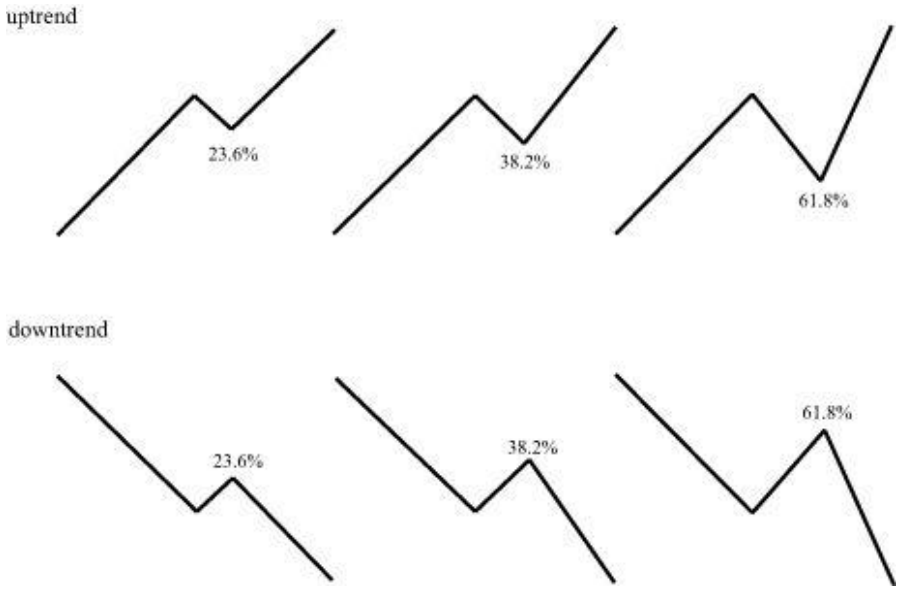
Applied to stock price analysis, this sequence identifies degrees of likely retracement against a prevailing trend. Analysts expect retracement to occur at specific percentages against the prevailing trend.

For example, the extremes in price levels within a trend (top and bottom) represents a number of points of movement. Retracement in the opposite direction is a temporary counter-movement of a smaller number of points. When the number of points in the primary movement are multiplied by the key

Fibonacci ratios of 23.6%, 38.2%, and 61.8%, the result indicates likely retracement as well as levels of newly-set resistance and support.

- 23.6% is the result of dividing a value in the sequence by the value three places ahead (for example, 34 ÷ 144 = 23.6).
- 38.2% is the result of dividing a value in the sequence by the value two places ahead (for example, 55 ÷ 144 = 38.2%).
- 61.8% is the percentage that each number represents of the next number in the sequence (for example, 89 ÷ 144 = 61.8%).

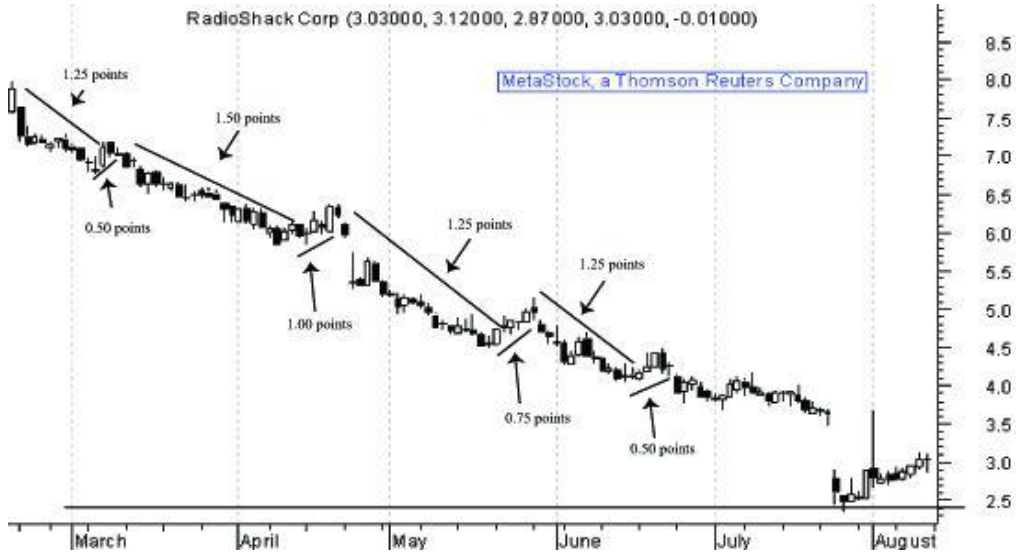
These percentages set likely price levels where retracements will be most likely to end, and the primary trend resume. There are three, however (23.6%, 38.2% and 61.8%). So how do you know which one will apply?
The percentages represent levels where reversal indicators are likely to be found. If a reversal signal is not found at 21.6%, traders identify the 38.2% level and look there; if there is no reversal signal, they look once again at the 61.8% level.



In the six-month chart of Radio Shack, four examples of retracement demonstrate how closely the Fibonacci numbering system predicts timing:

- A 1.25 point drop and **0.50** retracement, or 40% -- Fibonacci reveals that a 38.2% retracement is **0.48**.
- A 1.50 point drop and **1.00** retracement, or 66.7% -- Fibonacci reveals that a 61.8% retracement is **0.93**.

- A 1.25 point drop and **0.75** retracement, or 0.60% -- Fibonacci reveals that a 61.8% retracement is **0.77**.
- A 1.25 point drop and **0.50** retracement, or 0.40% -- Fibonacci reveals that a 38.2% retracement is **0.48**.



Signals helping you to tell the difference between retracement and reversal:

- Retracement is likely to reveal no specific reversal signals within the chart. In comparison, a trend reversal is usually set off with strong reversal indicators and confirmation.
- Confirmation for reversals will be seen in the form of strong indicators like engulfing patterns, white soldiers or black crows, or harami signals.
- Retracement is most likely to occur right after exceptionally strong price movement, meaning part of the gain or loss is reversed in response to over-reaction to current news (such as earnings disappointments) and correcting to the established trend direction.
- A reversal is not identified with immediate news, and can occur at any time.

Segment 2. The Dow Theory and tracking of technical trends

Trends are the essential attributes of charting. Every chartist relies on identifying and tracking trends; and equally important, spotting reversals.

On the basis if individual stocks, the same principles apply as those applied to market-wide indices like those tracked by Dow Jones. The key is in confirmation.

How the Dow identifies trends

For individual stocks, confirmation is found in numerous indicators. These include candlestick formations, price patterns including tests of resistance and support, price aberrations like repetitive gaps, momentum oscillators, and changes in volume levels.

For the market as a whole, trend establishment and reversal is more likely to be based on the Dow Theory and its version of confirmation. Under this definition, *confirmation* is the reversal in a trend when found in one index and then confirmed by another. Two rules apply:

1. A change in direction represents a new trend only when a second index also changes course and follows. (The best-know version is the DJIA followed by the transportation average.
2. New trends have to be further confirmed by volume. The theory is based on the assumption that high volume represents the true sentiment of the market.

Based on these rules of the Dow Theory, market-wide primary trends are not established until the change in direction is confirmed in both of these ways. The new trend continues under price once again reverses and finds confirmation.

The three types of trends

The Dow Theory identifies three types of trends:

A *primary* movement or trend lasts between several months and several years and is the prevailing direction of the market. A strong upward trend is described as a bull market, and a strong downward trend is called a bear market.

A *secondary* trend (also called a reaction) lasts from a few days to a few months, and exists within a primary trend but moves in the opposite direction. Once the secondary trend is over, the primary trend movement resumes.

A *short-term* trend, or short swing, extends from a few hours to a few days. These are highly chaotic and do not provide any long-term value. However, such swings tend to represent over-reactions to current news (such as earnings surprises) and strong movements quickly correct themselves.

The math of trend anticipation

Many systems are used in technical analysis to determine the strength, duration and importance of current trends. These include moving averages, momentum index tracking, volume levels and dominance (by buyers or sellers), and many more.

Traders relying on specific indicators do not need to master the often complex calculations involved in developing technical indicators. Charting services provide indicators as features of charts and you can select those you want to track. No separate calculations are required; however, it is crucial to know the meaning of an indicator's mathematical moves.

For example, many momentum oscillators like Relative Strength Index (RSI) consist of an index value between zero and 100. When the index value moves above 70, the stock may be over-bought; and when it moves below 30, it may be oversold. This is useful in confirming reversals and timing of trades.

Other technical indicators rely on a combination of mathematical calculations and movement of either price or indicator. For example, Moving Average Convergence Divergence (MACD) tracks two moving averages. Significance is identified when the MA lines converge of diverge from one another; when they cross the current price above or below; or when the rate of acceleration in the MA lines changes, it signals reversal.

Historical primary trends

The confirming properties of the Dow Theory can be observed over time by studying the history of the industrial and transportation averages together.

The chart shows the industrials average as a line graph, and transportations ass OHLC, both summarized with monthly prices over a full decade. Notice that both averages track the long-term trend very closely. Technicians are especially interested in spotting reversals.

In the moment of analysis, what one analyst sees as a clear reversal signal may be viewed by another as a secondary trend. There is rarely universal agreement among analysts when one trend is ending and another one beginning. However, a study of the historical price movements of these two indices shows how the Dow Theory works.

The first five years clearly demonstrate a strong uptrend in the industrials; this is confirmed by the transportation index. By 2008, however, the price levels

began declining in the DJIA even as the transportation index peaked toward the end of 2008.
By mid-2009, the downtrend in the DJIA had been established and upward movement began. The transportation index lagged behind slightly, but quickly confirmed the upward movement. The early 2012 dip appeared to be a secondary (reaction) trend, although it was too early to tell for sure based on the duration of this chart.
The overall chart contains clearly identified resistance and support levels. The resistance level was approached three times, represented by price peaks, but did not break through. As this trend continues, a move above resistance could signal the beginning of a strong upward breakout.
Support was violated in mid-2009 and to many, this appeared as a new bear trend. However, prices has rebounded to the upside within a few months and the uptrend resumed, establishing a rising support trend for the last three years of the period.

The question of duration

Any primary trend can last a few months or a few years. There is no consistency in a primary trend's actual duration, and the many secondary trends often deceive analysts to believe that a reversal has occurred.
Some wise guidelines for trend analysis:

1. Always confirm the trend, especially reversals.
2. Keep an eye on resistance and support for the market-wide trend, and note what happens when prices approach those levels.

3. Track volume as well as price. Although volume was not shown on the chart of the two indices, any spikes in volume levels add confirmation to the price direction.

Segment 3. Identifying trend lines and channel lines: up, down and horizontal

This segment demonstrates how trend lines and channel lines help identify continuation and reversal in current trends; and how to spot attempted breakouts even in volatile price trends.

Trend lines

A trend line is simply a single line tracking a trading range as it moves in an uptrend or a downtrend.

A trading range may be horizontal, defined as having a fixed-price resistance and support. Or it may move over time, either upward or downward:

- When a trading range is rising, the trend line is a straight line drawn beneath the price; it tracks the movement of the trend and reflects rising support.
- When a trading range is falling, the trend line is a straight line drawn above the price; it tracks the movement of the trend and reflects falling resistance.

Prices move in trends and, while the duration of a trend varies, it can be tracked as it evolves in either direction. The trend line connects a starting point of the moving price, to the point where it ends or pauses. The trend line runs into a price moving in the opposite direction and this also marks the end of the short-term price movement.

The trend line reflects rising demand that increases as price levels rise; or falling demand accompanying a decline in the price range. Once that trend concludes (marked by opposite movement in price falling below the rising support level, or rising above the falling resistance level) it means price may be about to reverse and move in the opposite direction.

The angle of the trend line is a visual representation of the strength in the short-term trend. The steeper the angle, the stronger the trend. The trend line should extend for some period of time to validate the trend itself. The longer the trend – even if a secondary one – the more significance it holds. The greater the extension of the period, the greater the likelihood of reversal.

Chartists do not place weight in extremely short-term price movement but rely on established trends to time entry and exit. A trend line may be based on a "rule" that prices may not violate the line; or they may ignore price spikes when those spikes do not hold beyond a very small number of sessions.

Examples – upside and downside

Trend lines take many shapes and sizes, and understanding how these work as defining trends improves your ability to interpret price direction and momentum.

For example, the chart for Shenzhen Expressway reveals a generally declining trend. To better understand the rhythm of price movement, two downward trend lines are shown. Both last approximately one month, with a one-month pause of sideways movement in between. The trend lines reveal the angle of price decline for each occurrence.

Another example, the Cummins chart, contains longer-term trend lines. The first is an uptrend lasting 2.5 months with a small dip halfway and then another at the conclusion of the first upward trend line.

How can you tell that this uptrend will lead to a reversal? The relatively narrow range found in the last three weeks of February indicates the loss of momentum among buyers. This is a clue that a downtrend is on the way.

The very brief continuation of the uptrend ended decisively as the new downtrend and trend line began. This continued to the end of the charted period and returned price levels to their approximate level five months earlier.

This downtrend was not without volatility. If you consider the trend line as declining resistance, you find at the end of April a breakout above the line, which failed.

Trend lines are good tools for gaining insight into the evolution of a trading range. The last example reveals that when the trend line lasts for a period of months rather than weeks, perspective on support (moving upward) or resistance (moving downward) is improved with the trend line in place.

Channel lines, expanding the trend line

The trend line demonstrates how evolving trading ranges act and helps identify their ending and reversal points.

Expanding on this, channel lines combine a trend line with a second line on the opposite side of the price. This shows how uptrends and downtrends may contain sharp angles and yet maintain the same breadth.

A *channel line* is such a movement. It consists of a trend line and a channel line, with the same approximate breadth of trading in between.

In technical analysis, when one side or the other moves closer or farther away, the result is a triangle or a wedge. These imply a change in direction or momentum, and often are used as continuation or reversal signals.

The channel lines pattern is different. It remains steady until it ends, and at that point a reversal is very likely. The parallel lines define channels and sets the movement apart from triangles and wedges. It reveals a trend that contains identical movement in both resistance and support.

As long as the channel continues in its direction, it serves as a continuation pattern. However, as soon as the dominant line (the trend line) runs into contrary price movement, the continuation ends and that point marks likely reversal.

For example, the five-month chart of China Nuclear Industry demonstrates how continuation becomes reversal, and how this works in both directions. The uptrend is marked by the lower trend line and the upper channel line, marking movement with identical breadth.

Although the conclusion of the channel occurs when the price moves above the higher channel line, this would be interpreted as a breakout above resistance. Because prices then moves sideways, the breakout appears weak and is unlikely to succeed.

A marked price decline with gaps occurs toward the end of February, followed by a very brief rally during the first week of March. Once this ends, the signal of a coming downtrend is quite strong.

The second channel lines pattern begins immediately, and continues until mid-May. The continuation ends with the very strong downward move below declining support. Just as the previous breakout above resistance faltered and resulted in a downtrend, this violation of support weakens immediately.

This double channel lines pattern demonstrates that when resistance and support evolve, a breakout can occur in the established direction; but the breakout (above upward-moving resistance or below downward-moving support) indicates weakening momentum and likely reversal.

Another example of the channel lines pattern is found in the 8.5-month chart of Oneida Financial Corporation. This begins with a channel lines uptrend extending more than three months. Note the strong one-session spike above rising resistance. This is followed by a sideways movement within the established channel.

After completion of this channel, an exceptionally volatile period extends between early March and mid-May. A new uptrend is strongly suggested by the very strong lower shadow session immediately before the new channel lines pattern.

This long lower shadow indicates lost momentum among sellers. After this, the next two sessions form a *piercing lines* pattern, a two-session candlestick bullish

signal. This consists of a long black session and then a long white session. The long white opens with a gap below the close of the previous day, and closes within the previous day's real body range.
This marks the new upside channel lines, which may also be seen as a resumption of the previous channel lines. The entire chart reflects an upward trend, and the two channel lines confirm that this trend is likely to continue.

Both channel lines also work as a means for better understand ding short-term volatility. In the second channel lines, there are two clear instances in which the lower shadows fall below support and one where an upper shadow moves above. These attempts to change the trend direction all failed, further strengthening the uptrend in two ways. First, the uptrend holds without any reversals. Second, the breadth of trading also holds, revealing that the established and evolving trading range is where buyers and sellers have come to agreement above the price level and breadth.

Conclusion

Trends and channel lines are less complex than many other technical indicators. They provide advantages in chart interpretation in several ways:

1. They define current trends in both direction and duration.
2. They signal when trends are ending, and the likely continuation or reversal that will follow.
3. When continuation or reversal are confirmed, trend lines and channel lines are revealing.
4. When resistance and support evolve, channel lines identify failed attempts to move out of the established breadth of trading; these lines also show

continuation and final conclusion and reversal of the trend.

Segment 4. Short-term trends, reaction trends, and primary trends - analysis on stock charts

The Dow Theory as the basis for technical analysis; its emphasis is on identification of three types of trends:

1. Short-term, or "swing" trends lasting a few hours to a few days.
2. Secondary, or "reaction" trends lasting between a few days and a few months.
3. Primary trends, lasting between a few months and several years.

A short-term trend – chaos of the moment

The short-term trend or "reaction swing" applies more to individual stocks than to the index of the market.

The swing represents unending reaction and adjustment between buyers and sellers. Every form of news and information causes a reaction in the market, and prices adjust in both directions as the new information is absorbed.

The "swing trader" is a trader who acts on these chaotic price swings. This trader recognizes that quick price movements often are over-reactions to news; and that the reaction is likely to be corrected within one to three sessions.

Short-term price movement is most often guided by emotion rather than rational analysis. For example, a disappointing earnings report, rumors of a takeover, or changes in guidance for the coming year, all may create short-term swings. These invariably move in the opposite direction when the other side (buyer versus seller or vice versa) corrects the exaggerated movement.

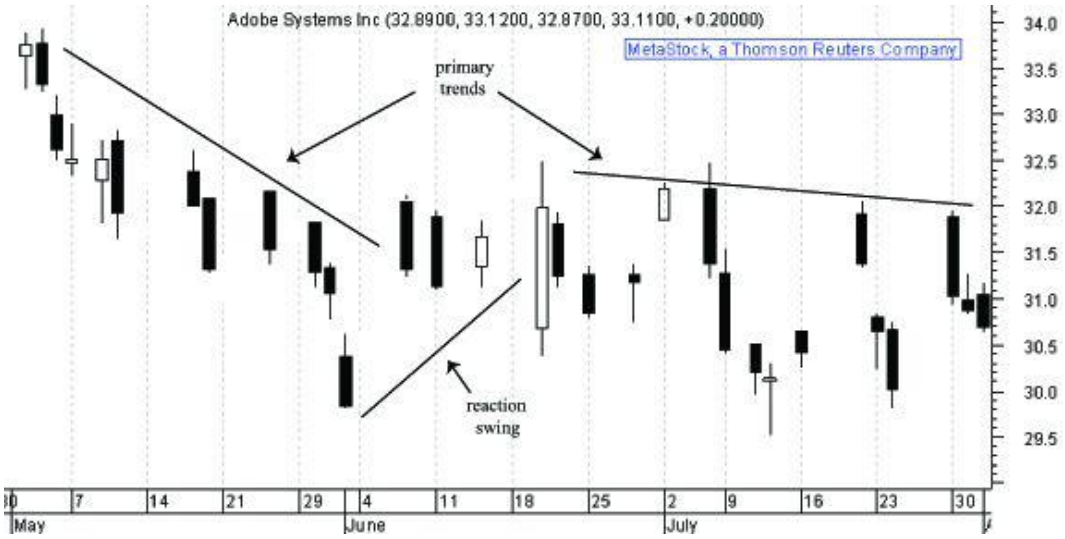
The chart of Dynasty Fine Wines consists of two downtrends as marked. Note the two swing trends occurring within these longer-term downtrends. First was a two-session dip below the trend, which immediately corrected. Second was a one-session opening above the trend line, which also corrected right away.

These are typical of the nature of swing trends – very short-term and quickly corrected by movement back into the existing trend direction.

Reaction trends – examples

Compared to the very short-term swing trend, a reaction trend lasts longer and can range between a few days and a few months. It tends to disrupt the primary trend and is recognized by the lack of any specific reversal indicators, or even contrary indicators.

For example, the chart of Adobe Systems consisted of two primary trends (or a single primary trend interrupted for three weeks). The reaction swing was sharp but very short-lived. There were no upward-moving reversal indicators. In fact, at the beginning of the reaction, the candlestick formation seemed very bearish.



The end of the reaction period was clearly marked with an exceptionally strong bear harami pattern. This is the two-session signal consisting of a long white day and then a shorter black day. The second day opened and closed within the range of the first day.

This was strong based on the size of the white session. It marked the end of the reaction and led to resumption of the downtrend (or beginning of a new downtrend, depending on how these are interpreted).

Primary trends – historical examples

The swing trend and reaction are most often utilized to analyze individual stocks, although they can also be applied to the broader market.

Primary trends are established by a series of specific changes in price direction. Among these, expect to see a change in direction confirmed by a second market index. For example, the Dow Jones Industrial Average would be confirmed by changes in the Transportation Average.

The chart for the DJIA extending over 12 years consisted of three primary trends:

- First was a bullish trend from 2003 to 2008;
- Second was a bearish trend from 2008 to mid-2009;
- Third was a bullish trend from mid-2009 onward.

The bearish trend in the middle could be interpreted as a reaction trend, but its duration of 1.5 years makes it more likely a primary trend. The downturn in price levels was confirmed by the Transportation Average, confirming this as a primary trend.

The first primary trend revealed numerous swing trades, and the second primary trend was characterized by greater volatility in the form of reaction trends. The distinction in these two offsetting price movements was duration as well as degree of price change.

The distinctions among all three trends are a matter of interpretation. You may call a shorter-term trend either swing or reaction; the important matter, however, is to be able to understand how a trend affects price direction and your timing of entry and exit decisions.

PART 5: MOVING AVERAGES

Segment 1. What are moving averages?

The *moving average* (MA) is a tool used in technical analysis to better understand trends in price. Because short-term price movement may be very chaotic, computing averages helps smooth out the trend and better displays the direction and momentum.

MA is used in many of the widely used indicators, notably momentum oscillators and volume signals. Averaging the recent past is a key component in analyzing and understanding the current trend, and in anticipating what might happen next.

Computing the moving average (MA)

MA is a basic statistical function. It consists of adding up the values in a field of values, and then dividing the total by the number of values.

A *field* is a collection of values. For examples, 20 sessions of closing prices represents a field of 20 values.

A *value* is a single entry within the field.

The formula for the *simple* moving average is:

$$(V_1 + V_2 + \ldots V_n) \div n = MA$$

To apply this formula, a field of seven values is averaged. In this case, the 'n' value is 7:

1	13.40
2	13.21
3	11.64
4	12.90
5	12.15
6	12.98
7	13.16

The first step in finding the moving average is to add these together:

$$(13.40 + 13.21 + 11.64 + 12.90 + 12.15 + 12.98 + 13.16 = 89.44$$

Next, because there is a field of seven values, the total is divided by 7:

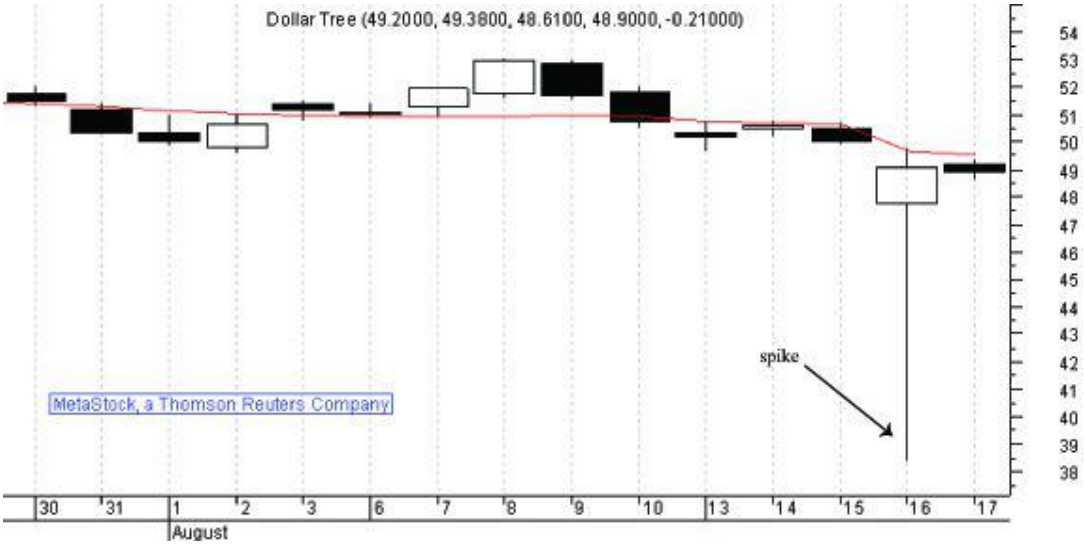
$$89.44 \div 7 = 12.777$$

The simple MA in this case is 12.777, representing the average of the seven values in the field.

Dealing with non-repetitive spikes

One of the problems in calculating MA is the extreme volatility that occurs in short-term price trends. A statistical method for ensuring the greatest accuracy

in MA calculation, is to remove exceptional spikes from the field.
For example, if a field of values conforms generally to a range of results, but one – a spike -- is exceptionally high or low, that value may be removed to even out the analysis. Because the spike was non-repetitive, it makes the adjusted MA more accurate.
The "rule" is that the spike should be exceptional, and does not repeat. In the chart for Dollar Tree, the daily trading range was extremely narrow. However, the second to last session included a price dip form the existing range of 48-53 down to 38.
The moving average (represented by the red line) and calculated on the daily low price, also dipped slightly due to the spike. Removing this from the analysis would level out the average.



Although the effect of removing the spiking day would be minimal in this case, over a longer period of time it could be significant.
In selecting the MA method, spikes can also be removed by picking a different price point. This example was based on each session's low price. By selecting closing price for the MA, the spike would be removed from the MA.
Applications of the MA concept
In chart reading, the opening and closing prices are revealed, and may also be accompanied by a series of one or more MAs. For example, the chart for Facebook includes two MA lines, a 200-day MA and a 20-day MA.

For most MA analysts, crossover – the point where one or both MAs cross price, is a very significant sign. Note the crossover toward the end of the chart. Both MA lines fell below price as the price itself seemed stuck on the range of $22-24 per share.

A second important signal is *convergence*, the point where both MA lines meet. This occurred twice on the chart. The first convergence was found near the top of the chart, and both were above current price. The second was found near the end of the chart as the MA lines once again moved above the price range.

Another telling signal is the opposite of convergence, or *divergence*. Note how the 200-day MA moves below price and at the same time, away from the 20-day MA just as the price level falls to an all-time low.

* * *

The theory behind the use of MA in price analysis, is that the averages reveal a lot about the trend, and help to identify the strength or weakness of that trend as it evolves.

Indicators like MACD rely on MA and in fact this one is based entirely on MA trends. Like many indicators, this is a *weighted* MA, meaning more importance is given to the most recent values in the field.

Segment 2. Types of MAs

The MA is a statistical measure used in many technical indicator. It is intended to level out otherwise chaotic short-term price movements. This MA reflects the trend direction by incorporating the values for several periods.

MA can be computed in three ways: simple, linear and exponential.

Simple moving average

The simple moving average assigns equal weight to all of the values in a field. A *value* is the component of the average; for example, closing prices for a series of 20 sessions represent the 20 values. A *field* is the range studied. For example, in a 20-day MA, the 20 sessions represent the range (in statistics, also called the "population").

The simple MA may be used by itself as a device for leveling out the selected values. The values may be closing or opening prices; an average between the two; the highest price in the session's trading range; or its lowest price.

Charting online includes MA calculation, enabling analysts to quickly visualize the trend without needing to calculate its change. MA normally is shown as an overlay to price. In this way, you can see when MA is above or below price, or when it crosses over.

The longer the MA, the less volatile it is likely to be. However, longer-term MA also tends to distort the true current trend because older data are outdated. This is why many indicators take two corrective steps:

First, they employ two MA lines, a longer-term and a shorter-term.

Second, they weight the MA so that the more recent values are given more influence.

Linear averaging

A *linear weighted MA* is a form of weighting intended to provide more importance to recent data. There are many systems for weighting; the linear approach assumes a weighting factor to be applied to each new entry to the field.

Each value is weighted according to its numerical count within the field. For example, in a field of seven values, the most recent one is multiplied by

7; the second most recent by six; and so on until the oldest is valued at one time. Then the total is divided by the sum of the weighting digits.
Example: a field of seven values is averaged based on the linear averaging formula. From earliest to latest:

1	13.40	x	1 =	13.40
2	13.21	x	2 =	26.42
3	11.64	x	3 =	34.92
4	12.90	x	4 =	51.60
5	12.15	x	5 =	60.75
6	12.98	x	6 =	77.88
7	13.16	x	7 =	92.12
Total		28		357.09

Linear MA: *357.09 ÷ 28 = 12.753*

In this example, the outcome is very close to the straight moving average for the same field (12.777). In a field with greater volatility, the linear MA approach is likely to result in a far different outcome.

Exponential weighting

One method for weighting that relies on a set formula is *exponential moving average (EMA).* This is widely used in technical analysis, notably for many momentum oscillators.

The calculation involves first calculating an exponent, and then applying it to the newest entry in a field of values. This enables calculation even over a long period of time, but without requiring recalculation. EMA is automatically calculated for charts including technical indicators.

The computation of the exponent is $2 \div n$, where n is the number of values in a field. This exponent is used to calculate the EMA. The steps:

1. Calculate the exponent based on the number of values in the field.
2. Calculate a simple MA for the first MA value.
3. Subtract the next entry to the field from the MA.
4. Multiply the difference by the exponent.
5. Add the result to the previous MA.
6. Repeat for each new entry to the field.

This process is calculated automatically on online charts and for momentum oscillators relying on EMA.

Segment 3. Trends and trend reversals based on MA analysis

Trends never continue indefinitely. The purpose in MA-based analysis is to identify when a current trend begins to flatten out, slow turn, or reverse.

MA is one of many indicators used by chartists in an attempt to characterize price movement and to develop a rationale for timing of entry and exit.

The nature of trends

Trends are not predictable. However, some common traits exist in trends, largely based on MA study and analysis. These include:

1. As trends approach their end, they tend to flatten out and plateau.
2. Exceptionally strong and sudden trends also tend to have equally strong and sudden reversals.
3. Trends are inhibited by resistance and support.

None of these observations are true all of the time. They are common traits seen often, and may be used to anticipate *likely* price movement. Trends, like all indicators, are most reliable when independently confirmed.

Momentum and peaking

Trends begin with a degree of momentum. The stronger the momentum, the faster the trend develops. This momentum is easily spotted.

Also easily spotted is a peeking effect. A trend will not continue to grow at the same pace indefinitely. Eventually the rate of growth in the trend slows down, and then levels out. After this, a period of sideways movement may occur; or the trend may suddenly turn and move in the opposite direction.

For example, the three-year chart of Oracle consists of a one-year uptrend, then a decline, and finally, price settles into a sideways movement. For traders, this situation is difficult to interpret, because price may resume the previous uptrend or reverse and move downward. This is why confirmation is essential following a sideways price movement.

Notice how the momentum flattens out toward the end of the uptrend. The beginning was characterized by relatively long candles, but these declined right before the peak. The three small month sessions signaled the coming end of the trend.

A different kind of trend was found in the three-year chart of Johnson & Johnson. The three major trend movements (up, down, then up) were relatively sudden with no smoothing out. Finally, the price trend flattened out toward the end of the chart.

The final uptrend flattened out considerably before prices settled into the resistance and support range. Note how the range narrowed as the trend evolved.

Finding reversals with MA changes

The likely signs of slowing momentum and coming change will take many forms. These include the development of triangles, volume spikes, candlestick

reversal signals, and changes in directional indication in momentum oscillators, such as RSI and MACD.
Reversal takes many forms. Keep these guidelines in mind when trying to find the point of likely reversal:

1. Confirmation is essential before acting on reversal indicators.
2. The likelihood of reversal is strongest at resistance and support.
3. Sideways price movement shows indecision, but eventually either buyers or sellers will take control and create a new trend or a renewal of a previous one.

Segment 4. MA applied to price changes

Moving averages assist chartists in recognizing the meaning of trends, reversals, and momentum. By tracking the MA line next to price movement, trends and subtle changes in trends become evident.

The significance of MA crossover (moving from above to below price or vice versa) is that the MA either supports the evolving trend or contradicts it.

MA changes signaling price reversal

The single MA line works as a tool for anticipating long-term price trend, its momentum, and coming directional change.

Because the MA is a lagging indicator, it may be found either above the current price level or below it. That in itself is not significant; however, when the MA line crosses price or lags far behind (diverges away from the price trend) that implies a reduction in the trend's momentum.

When MA crosses the price (from above to below or vice versa) that also acts as a significant signal. However, this should be confirmed before entry or exit decisions are made. The MA includes a range of information that has to be judged in the context of current price and direction.

Gaps and their role in price movement

There are many types of gaps observed in technical analysis; many are not important. The *common gap* occurs frequently, representing a space between one session's closing price and another's opening price.

A second is the *breakaway gap*, which is found at a point where price begins to trend above or below the established trading range. When found in conjunction with a move above resistance or below support, it deserves further attention.

A gapping move such as this may mark the beginning of a new trend. It may also reverse very quickly and fill, meaning the price trend returns to the established trading range. Gaps are key technical signals when tracking price trends and momentum.

Two additional kinds of gaps hold special significance when confirmed by MA. The *runaway gap* is seen when a trend – especially a newly set trend – is exceptionally strong. It consists of several sessions of gapping prices, often consecutively.

For example, the chart of Caterpillar revealed an interesting uptrend started with three consecutive upside gaps. This was a runaway gap.

Confirmation was found in two forms:

1. Although a three-session downtrend occurred immediately before the runaway gap, the last black day and following white day formed a bullish candlestick pattern: the *piercing lines* signal. Immediately after this, three gaps appeared consecutively.
2. More subtle but equally important was the change in the MA line that preceded this move. The line moved from above the price line to below, and then began tracking price movement. Although the MA remained below price, it tracked upward. The crossover at July 23 was noticed because it set the MA below price for the remainder of the chart. This indicates that the momentum of the uptrend remained strong.

A second and equally revealing gap is found when momentum has declined, and a reversal is about to occur. The *exhaustion gap* is found near the top of an uptrend or near the bottom of a downtrend.

For example, the chart of China Telecom began with a sideways movement and then moved strongly upward over a three-week period. The exhaustion gap formation occurred after price dipped, signaling the end of the uptrend.

The meaning of this change in the uptrend was signaled by two indicators beyond the exhaustion gap, both confirming the coming reversal:

1. A bearish meeting lines signal formed at the top, consisting of the last white session and the first black session. This formation, when found at the top of an uptrend, often is the signal that reversal is about to begin.
2. The MA tracked the uptrend, but it diverged lower as the trend continued. In fact, it crosses over only after the reversal had occurred right at the conclusion of the chart. An enduring uptrend would expect to see the MA line track closer to the price trend and to cross above; this MA never did, and it – along with the exhaustion gap – anticipated reversal.

<u>MA and interaction with resistance and support levels</u>

Analysts expect MA lines to reveal and anticipate the momentum of a price trend. At the same time, MA also interacts with resistance and support and reveals whether these trading range borders are strong or weak.

Even in a dynamic trading range, when MA remains within the established borders of the trading range it indicates that those borders are likely to hold.

The chart of Google makes this point. It consists of a downtrend, a turn, and then a very strong uptrend. However, the MA for this chart was very revealing:

1. MA remained within the trading range borders and tracked price very closely.

2. MA was above price during the downtrend, but crossed over and tracked the uptrend from beneath.

* * *

The combination of MA with other indicators – such as candlestick reversal signals, analysis of gapping price patterns, and conformity to the trading range, all make MA a useful technical confirmation indicator.

PART 6: INDICATORS

Technical analysis relies on the study of a range of indicators. These come in many specific types and often are based on calculations; for those using charting services, the calculations are built in to charts automatically.

Segment 1. Indicator types: price, volume, momentum

There are three broad ranges of indicators. These are based on price, volume and momentum.

Price indicators identify cause and effect of price trends. While many charting techniques in both Western technical and analysis and Eastern (candlestick) analysis identify reversal or continuation, some broader price formulas are helpful in providing overview.

Volume indicators indicate changes in the price trend based on averaging of volume trends and separation between buyer-dominated or seller-dominated volume trends.

Momentum indicators measure the speed of change as well as direction. Many valuable indicators provide confirmation of what price and volume trends forecast.

The range of price indicators

Two useful price indicators are the average true range (ATR) and accumulation/distribution (AD).

Average true range measures volatility rather than the price trend itself. Other signals can be used to track trend direction and momentum, which ATR is a confirmation signal for the price volatility (risk) within the trend.

ATR is an exponential moving average (EMA) of a specified number of trading sessions based on a stock's true range. A popular period is 14 days.

True range is an extended trading breadth from the previous day's close to the current day's close (as opposed to a single session's trading range). For ATR, the "true range" is the largest of:

1. Most recent high price levels less most recent lows.
2. The latest sessions, high minus low.
3. The latest session's low price, minus the previous session's close.

The focus on ranges is central to ATR analysis. Range summarizes the degree of enthusiasm or lack of enthusiasm among traders. The greatest the ATR, the greatest the assumed level of enthusiasm among buyers (in an uptrend) or sellers (in a downtrend).

If the range begins to decline as the trend evolves, it provides a forecast that the trend may be slowing down. This "early warning" often precedes other reversal or momentum signals.

The chart of Exxon Mobil demonstrates how ATR is used as a confirming price indicator. The long-term uptrend is not showing any specific weakening just in a review of price. However, the trend line does end with a small price decline. Confirmation of this is found in the strong decline of ATR, summarized below the price chart. This reveals a steady decline in true ranges, concluding that the price trend is likely to reverse in the near future.

The second important price indicator of accumulation/distribution (A/D). This may be viewed as a momentum indicator because it measures levels of buying or selling interest. It can also be termed a volume indicator because its index value is based on volume flow.

A/D serves as a price measurement even though it contains elements of momentum and volume. The A/D formula is:

$$\big((Close - Low) - (High - Close) \big) \div (High - Low) \times Volume$$

This calculation is applied to each session and then added to or subtracted from the cumulative index value. An analysis of the formula reveals how price, volume and momentum all come into play in the A/D line.

The index moves between a range of +1 and -1. When the line moves into positive territory, buying pressure is greater than selling pressure; and the opposite is in effect when the index value moves into negative territory.

The chart of Garmin Ltd. Reveals selling pressure in two instances, one near the beginning of the chart and another at the end.

The first example combines a drop in the trading range, augmenting the strength of the downtrend. It is confirmed by a strong move of the A/D line into negative territory.

The second example is more difficult to find in the price trend, since it appears to be on a strong upward movement without pause. However, the A/D line

moves into negative territory at the very end of the chart, demonstrating the potential for a reversal in the immediate future.

Volume indicators

Volume indicators confirm price direction and often precede a strong reversal. The most easily spotted of these is the price spike.
A spike occurs when:

1. Volume jumps far above the average range of typical trading sessions.
2. The volume level immediately returns to previously set levels and does not recur.
3. The significance of the spike is confirmed in price changes.

Two additional volume indicators are worth tracking, and both may act as leading indicators, signaling likely reversal before the price itself confirms the change.
On-balance volume (OBV) is the calculated sum of total volume for a session, identified as "up" or "down." Up volume is given positive value and down volume is given negative value.
A flaw in this is that "up" or "down" are applied whether the dominance of one side is fractional or large. So when volume levels are very close, the OBV trend can be distorted.

The sum of OBV over a period of time is accumulated to track the volume trend. For example, COSCO Pacific experienced a serried of short-lived but strong uptrends. Based on price alone, it appeared quite volatile. Traders may have been reassured by the steady upward movement of OBV.

This trend provides a clue that the upward movement in price represents a reasonable level of growth, and that as long as this continues and does not begin to weaken, it reveals a likely continuation of that uptrend.

The second important volume trend is *money flow index (MFI)*. This expands on OBV by showing overbought or oversold conditions in price, making MFI am excellent indicator for timing of entry and exit. The moving average of MFI is most often expressed over the most recent 14 trading sessions.

For example, Netflix, an especially volatile company during 2011 and 2012, presented a difficult chart to interpret during the summer of 2012. The price level appeared to be trending upward, only to drop with a large downward price gap. It soon resumed the uptrend, however.

Based on price alone, the volatility was not useful to traders. The next big change could move in either direction. However, the MFI line provided insight about the wide trading range of this stock. The key points in MFI are index values above 80 or below 20. Above 80 indicates overbought, and below 20 indicates oversold.

On this chart, even with volatile price movement throughout the period, MFI moved above 80 only briefly and only once. The rest of the chart remained within the medium range.

This indicates that the price range, although broad, did not provide any buy or sell signals. The result: for those holding Netflix stock, there was no immediate

indication to sell; and for those thinking of buying, there was no indication that the timing justified that decision.

Momentum indicators

The final of three types of indicators deals with *momentum*, the speed and strength of a trend. This attribute identifies moments when current trends begin to weaken, the first sign that the trend will be likely to reverse in the near future.

Segment 2. Convergence and divergence, and their significance

The concept of price convergence (prices moving toward averages) and price divergence (prices moving away from oscillators) provides great value in the study of price and momentum.

Expanding on this, specific indicators are designed to study convergence and divergence between two MA lines of different duration. Like price divergence, many useful clues can be derived from changes in these MA lines.

Bullish and bearish divergence

The use of oscillators to signal entry or exit is effective as a means of timing. A second and equally powerful method is to compare divergence between price and oscillators.

For example, comparisons between price movement and change in Relative Strength Index (RSI) reveals either bullish or bearish divergence, signaling changes in the current trend.

Bullish divergence means that an uptrend is not confirmed by the oscillator, in which case the uptrend is probably weak. Bearish divergence means that a price downtrend is contradicted by an oscillator, pointing to a weakness in the downtrend.

The chart of Wal-Mart (WMT) provides an example of bullish divergence between price and Relative Strength Index (RSI). A strong uptrend began in July and continued through the middle of August. By itself, the price did not provide any indication that the trend was weak.

However, the divergence seen in RSI pointed to a weak trend. Even as the uptrend began, the RSI line moved above the key index value of 70, pointing to an overbought condition. Shortly after, the RSI line declined and pointed downward.

The price trend appeared strong, but RSI diverged by (a) moving into overbought range and (b) moving downward, bouncing back up, and then moving downward once again. This signaled a weakening momentum among buyers in spite of the strong upward price movement.

Technicians look for confirmation, but a danger in this is that divergence may be overlooked. In this case, the combination of overbought signal and a downward RSI move served as a warning that the trend would not last much longer.

The failure of RSI to confirm the new high levels in the price movement was the revealing signal that the trend was losing its momentum, and that traders should begin looking for a confirming exit signal.

That exit alert appeared at the beginning of August in the form of a candlestick bearish reversal signal. The black session followed by a lower opening and lower closing white session was a bearish thrusting indicator.

Note also that immediately after this, a price gap appeared at the start of the new downtrend. The gap, plus the bearish thrusting lines confirmed the bearish reversal first foreshadowed in the RSI movement.

A bearish conversion works in the same manner but moves in the opposite direction. The chart of Loews provided a good example during a very volatile price pattern. Two examples of divergence were found. While the short-term price direction was downward, RSI moved up.

Just as the price trends were quite short, so was the RSI divergence. This does not mean it wasn't significant, however. The divergence itself predicted short-term uptrends in both instances, and both uptrends followed quickly.

The second example took RSI very close to the important 70 index value before retreating. This was worth tracking because the upward move was so strong while the price move continued downward.

Uses of convergence and divergence in analysis

The example of divergence between price and momentum makes the point that the signal contradicts apparent price movement. Even so, this is rare enough that when it does appear, it should not be ignored.

Convergence and divergence is applied more often to compare price trends to two moving averages (MAs). Changes in the MA lines (specifically convergence, divergence, and crossover) are signals of changes in the price trend.

A difficulty in interpretation may lead to confusion about the significance of price and MA trends. However, as a general observation, a few rules apply concerning convergence, divergence and price:

1. When price moves to a new high and the moving averages also move to new high levels (convergence), MA serves as confirmation of the price and its uptrend strength.
2. When price moves to a new low and the moving averages also move to a new low levels (convergence), MA serves as confirmation of the price and its downtrend strength.

3. When price makes a new high but the MA moves lower (divergence), it signals weakness in the uptrend price movement.
4. When price makes a new low but the MA moves higher (divergence), it signals weakness in the downtrend price movement.
5. MA movement often provides false signals, because MA lags behind price trends. As a consequence, the trend might weaken well before the MNA convergence or divergence appears. For this reason, rules 1 through 4 should be used as confirming signals of other reversal indicators.

Crossovers

MA does not always track the price trend specifically. One or both MA lines might cross price from above to below, or from below to above.

When crossover occurs, it is interpreted as a significant event, often strong reversal. When both MA lines cross from above to below the price, it is a bearish signal. Those who follow MA take this as a sell signal for long positions, but the indicator should be confirmed by other signals.

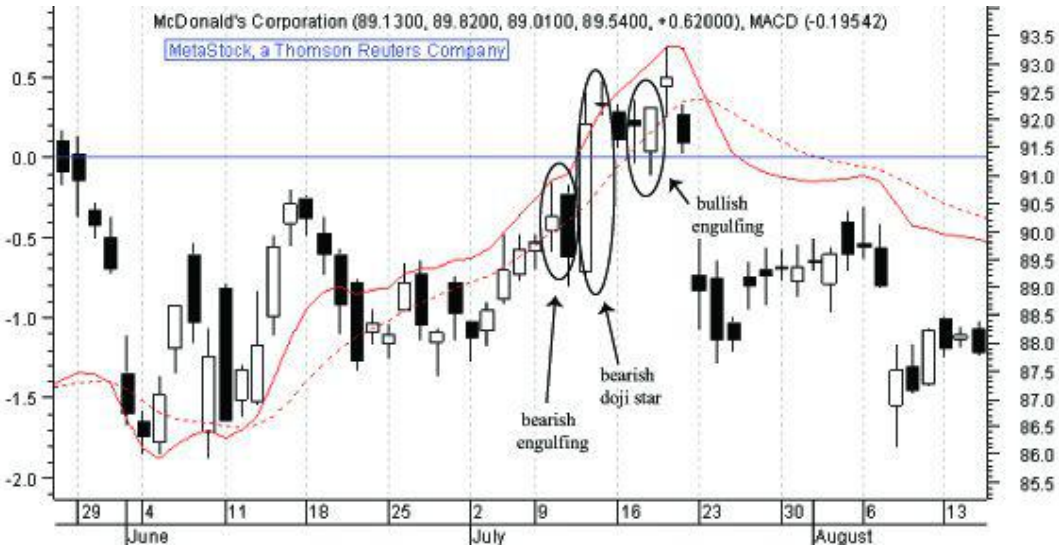
When crossover of both MA lines occurs from below to above, that is interpreted as a bullish signal, and chartists are likely to buy. However, confirmation is essential to provide greater timing accuracy based on the lagging indicator of MA lines.

The chart of McDonald's shows how confusing and contradictory signals are put into context using MA. Two MA lines are used in this case, a 200-day (solid red line) and a 20-day (dotted red line).

The crossover between June and mid-July indicates a strong bullish trend. However, the candlestick signals in July are confusing.

The first and second were both strongly bearish. The engulfing and doji star signals occurred in close proximity, making them even stronger as they confirmed one another.

The third was a bullish engulfing, which occurred exactly at the point where the MA lines crossed over and above the price level. This is an example of MA convergence along with price new high level, a strongly bullish indicator.



Even so, price then declined into a pennant before declining further. It is noteworthy that after this charted period, the stock settled into the mid-80s and the Ma lines moved below price, a very bearish signal.

This is an example of a chart with numerous contradictory indicators, including confirmation in both directions. This level of volatility is disturbing, even though McDonald's has been a stellar performer for many years. The short-term outcome is uncertain due to the contradictory signals.

* * *

Conclusion

Convergence and divergence is most often thought of in connection with MA trends and as a momentum oscillator. However, it also serves as a check on price strength or weakness. When the price and another indicator reveal divergence, it could be a signal that the current trend is weak.

The use of convergence and divergence has many applications. It is strongest when volatility is high and when confirmation of another signal is desirable. However, even with strong confirmation, no signals offer 100% reliability. However, signals do improve your interpretation of price and timing of entry and exit.

Segment 3. Directional indicators

Indicators of all types – based on Western or Eastern analysis – provide clear signals about the likelihood of future movement.

The three types of movement in price are reversal, continuation and consolidation.

Reversal signals

The most common signal technicians look for is reversal. A majority of important signals are going to be found at or near the end of a current trend. Reversal may consist of several important attributes:

1. Specific signals revealing that the current price trend is moving away from dominance by one side, with the expectation that the other side will be likely to take over.
2. Volume confirmation, found in the form of spikes of unusual growth in daily levels; and articulated with volume-specific indicators.
3. Further confirmation from momentum oscillators, showing that at the end of a trend, momentum slows immediately before the price direction stops and then moves in the opposite direction.

For example, the chart of Consolidated Edison provides several reversal indicators at the end of an extended uptrend.

First, a double top forms, including the second top with an exceptionally long upper shadow. This extension indicates lost momentum among buyers; even though price was pushed up during the session, it retreated into a very narrow trading range.

Second, a series of black crows followed closely, clearly marking the reversal from uptrend to downtrend.

Third, volume did not provide any useful confirming signals in this case other than a weak spike at the beginning of the black crows.

Fourth, the Relative Strength Index moved strongly into the overbought section right at the peak of the uptrend.

Taken together, these four reversal signals provided a clear forecast of the downtrend and marked the reversal.

Continuation indicators

A second form of indicator is the continuation signal. This is found during a current trend and indicates that the trend is going to continue. These indicators are less common than reversal indicators because chartist focus is on timing of entry and exit, which implies a change in the current trend.

Continuation indicators include specific signals that are quite different than reversal. These include:

1. Specific signals revealing continued strength of the current trend.
2. Lack of contradictory volume changes.
3. Momentum oscillators remaining within mid-range and without moving above or below buy/sell signal points.

For example, the chart of New World Development went through an extended uptrend from June until mid-August. However, there were two disruptions in the upward movement. How could you know whether this was a reversal or just a counter-move in the uptrend?

Two bullish continuation signals confirmed that the dips were not reversals. The bullish thrusting lines consisted of a white session followed by a black session closing within the range of the prior day. This is a reliable continuation indicator.

The second was a bullish separating lines signal. This consisted of a black session followed by a white session opening with an upside gap. It also confirms continuation of the uptrend.

Consolidation movement

The third for of movement is sideways. This represents a period following a trend, in which neither buyers or sellers are able to take over. Price consolidation is a period in which both sides define their stance regarding trading range and the forces of supply and demand.

An interesting problem involving consolidation is knowing how to recognize when it ends. The decision to continue the previous trend or to break in the opposite direction is difficult to spot. To manage this problem, several indicators have to appear.

However, because the period of consolidation is uncertain, the signals have to be exceptionally strong and confirmation is absolutely essential. Signals include:

1. A specific and strong signal of an end to the period of consolidation, preferably two consecutive signals.
2. Confirming changes in volume along with volume indicators supporting the indicated direction.
3. Further confirmation from momentum oscillators, showing a likely building in favor of the direction of a new trend.

For example, Home Depot had a month-long period of consolidation within a narrow two-point range. How can you tell when this sideways movement ends? The chart provided several clues forecasting an uptrend.

First, two candlestick indicators appeared, both providing a bullish signal. The upside gap filled is a three-session signal. A gap appears between the first two white sessions; and the third, black session fills that gap to complete the signal.

The second candlestick is a two-session signal, the bullish engulfing. This occurs below the support of consolidation, providing a strong clue that an uptrend will soon follow.

Confirming both candlesticks was the overall movement in the A/D line. It rose over an extended period including most of the consolidation period. This indicated that the next move would be to the upside.

<u>The importance of proximity</u>

All price patterns – reversal, continuation and consolidation – will provide signals, and these are going to take on varying degrees of significance depending on where they occur in the trading range.

As a general rule, the closer to resistance or support, the more chartists pay attention, especially to reversal signals. A reversal against an uptrend taking place at resistance, or as part of a breakout above that level, has greater weight and likelihood of a reversal, than one occurring at mid-range.

A bullish reversal found right at support or as part of a downside breakout, has a better chance of reversal than a signal occurring at mid-range.

These are the valuable aspects of proximity. Resistance and support are the price levels at which reversal is not only most likely to occur, but also where reversal will probably be strongest.

Mid-range reversal is likely to be relatively weak compared to reversal at resistance and support. This is true because these price borders of the trading range are strong, representing the price point where any breakout is unlikely to occur.

Segment 4. Using indicators with candlestick chart reversal signals

A key aspect to technical analysis is the development of specific signals flagging likely reversal. These Western technical signals often appear immediately before reversal. However, before entry or exit, these need confirmation. Candlestick reversal signals, when added to Western reversal indicators, are very strong reversal confirmation tools.

This section demonstrates how three popular Western indicators signal the end of the trend; and how these work with candlestick reversal signals to provide strong confirmation.

Indicator patterns

Of the many Western technical signals, some are more powerful than others. Some of the most easily recognized and reliable reversal indicators include:

1. Double tops and bottoms. These signal repetitive attempts at moving price in a specific direction. Failure marks lost momentum and normally is followed by price trends in the opposite direction.
2. Wedges. These reversal signals occur often and form declining breadth of trading. As the wedge narrows, reversal is likely to follow in the opposite direction (a falling wedge is bullish and a rising wedge is bearish).
3. Exhaustion gaps. Among the many types of gaps, the exhaustion gap is easily recognized as the last part of a trend. When a gap occurs after a steady trend, it may indicate that momentum has been lost, and reversal is very likely.

Recognizing trend endings with Western signs

A study of chart patterns reveals many types of reversal indicators. While these by themselves are not reliable for entry or exit, the patterns are the first step in developing a strategy to (a) find reversal signals, and (b) seem confirmation before taking action.

Double tops or bottoms are excellent markers of turning points. And among the most used reversals. The chart for Cisco Systems provided a clear double bottom in two consecutive sessions. Note how the downtrend immediately reversed and moved into a new uptrend.

Wedges are another favorite, due to their high reliability as reversals. A rising wedge is bearish and a falling wedge is bullish. As the breadth of trading narrows, reversal is expected.

The chart of Brightoil Petroleum provided a good example of a rising wedge. Note how the price breadth narrowed and concluded with three consecutive long days. Immediately after, a new downtrend slide began.

A third popular reversal signal is found in the exhaustion gap. Such gaps signal the conclusion of the current trend, and are signs of momentum being exhausted immediately before the reversal occurs.

Intel Corp. showed three exhaustion gaps. The first was at the end of an uptrend, and the second and third signaled the conclusion of a downtrend.

Confirming reversal with candlesticks

The popular indicators are very strong and chartists rely on them for entry and exit timing. However, by themselves, no indicators can be relied upon without confirmation.

The following charts are duplicates of the three shown for the popular technical signals; they are further expanded to reveal candlestick reversals. The confirming signals strengthen the indicated reversal in each case.

Cisco Systems had a classic double bottom that ended the downtrend and began the uptrend. But by itself, was this enough to make a trade?

The highlighted bullish harami – consisting of a black session followed by a white session opening and closing within the first day's real body, is a very strong indicator confirming a likely uptrend. Such an uptrend followed.

PART 7: MOMENTUM OSCILLATORS

Segment 1. RSI, MACD, Stochastics and others

This section explains how momentum oscillators work. There are many oscillators; the following discussion focuses on three of the best-known and most widely used: Relative Strength Index, MACD, and Stochastics.

Relative Strength Index (RSI)

RSI is a measurement of gains or losses during a trend. It is intended to identify and highlight overbought or oversold conditions. It is normally calculated over a 14-session period.

The calculation of RSI is:

$$100 - (100 \div (1 + RS))$$

(RS is: The average of upward closings in the past 14 days, divided by the average of downward closings over the past 14 days.)

Although it is useful to understand the calculation and how RSI is derived, the index is added to charts automatically by selecting the RSI option.

The index results are simply to follow. The RSI index ranges between zero and 100. If the index value moves above 70, the security is overbought. And if RSI moves below 30, it is oversold.

As a confirming indicator, RSI is valuable when tracking candlestick or Western reversal signals. However, strong movement in a sustained trend can also distort the true meaning of RSI, so it should be used in conjunction with other signals.

A significant move in RSI is divergence, when the RSI direction contradicts the price trend. This indicates that the price trend is weak. When divergence is found, RSI is acting as a leading indicator. When RSI conforms, it tends to act as a lagging indicator.

When RSI occurs along with price movement, it tends to confirm reversal signals. Because RSI is measuring momentum in price movement, as trends weaken, RSI can be used to note the difference between a temporary retracement and an impending reversal.

For example, Colfax Corp. went through two reversals in their trends. Both were marked with very clear and strong candlestick reversals, and both were confirmed by movement in the RSI.

The first reversal was marked by a bullish engulfing pattern at the bottom of a downtrend. This was preceded by a confirming dip slightly below the oversold line of RSI.

The second reversal signal was found near the top of an extended and strong uptrend. The bearish harami was a red flag that the trend was coming to an end. It was confirmed as RSI moved into the overbought area at the same time. These two together were a sell signal.

The application of RSI in this situation demonstrates how momentum confirms the subtle changes in price. It may be a leading or a lagging indicator, and in both cases it is effective as confirmation of what price signals forecast.

Moving Average Convergence Divergence (MACD)

MACD combines two moving averages and analyzes how they move in relation to one another, and in relation to price. It tracks momentum and provides significance when crossover occurs between the averages and price; and when the two MA lines converge or diverge.

MACD employs a net exponential moving average (meaning one is subtracted from the other). As they move closer (converge) or farther apart (diverge), the MA average takes on significance.

The shorter of the two is a 12-day MA and the longer is a slower-moving 26-day MA. The chart employs a crossover line known as the “zero line.” A positive MACD (above the zero line) tells you that the 12-day MA is higher than the 26-day; and a negative MACD shows that the 12-day MC is lower than the 26-day.

Positive MACD reveals that upside momentum is on the increase. Negative MACD reveals that downside momentum is increasing. These two general “rules” make MACD easy to spot and easy to use.

Some additional observations about MACD:

1. The zero line (or signal line) is a nine-day exponential moving average of the MACD. This is the dividing point between bullish (movement above) and bearish (movement below) trends. So there are actually three MAs in play: the 12-day move, the 26-day move, and the average of 9 days signal line.
2. The faster the move and the farther from the signal line, the more significant it is in terms of the trend momentum.
3. When the trend crosses over the signal line, it is bullish if the 12-day is higher than the 26-day; and bearish in the reverse moving below the signal line.
4. Divergence (MACD moving away from price) is bullish if the price forms a new low but MACD forms a higher low. This reveals slowing of downside momentum. The opposite applies in divergence above a new high in price; it reveals slowing upside momentum.

The details of the MA trends in MACD are complex, but the visual observation is easily observed. The point of MACD is to identify times when momentum is increasing or decreasing.
For example, Best Buy was quite volatile during the period shown on its chart. However, the volatility was more clearly understood with analysis of MACD in addition to price.

The crossovers occurred at key points in the trend. While price seemed to indicate uncertainty during the mid-July to mid-August period, MACD moved strongly below the signal line, displaying momentum to the downside.
As the MA lines crosses and MACD moved above the signal line, momentum shifted again and became positive.

This shows how MACD often anticipates likely momentum in either direction, and may diverge from what price appears to be revealing. This adds to the quality of the indicator, since MACD in both instances led the price trend before price levels turned.

Stochastics

Stochastics is a comparison between location of the current price and price levels over time. Resistance and support are important ingredients of the Stochastics trend as the oscillator is intended to identify likely reversal points.

The formula for this indicator is the result of calculating exponential moving averages for highest and lowest price levels over a specified number of sessions. It reveals convergence and divergence from the current price to the typical price range over the identified time period.

When price and Stochastic MA diverge, it provides a hint that the current price trend is weak or growing weaker. When the Stochastic MA moves faster than price (known as a "Stochastic pop") is tells you to increase holdings (if moving in the same direction as price) or to liquidate the position if diverging against price).

For example, The chart of Golden Eagle consisted on three specific trends, two down and one up. However, the value of Stochastics was in how that indicator anticipated the turn in advance of the price change.

In early July, the Stochastic anticipated the downtrend by moving down, accurately pegging the price trend that followed immediately.

At the beginning of August, it appeared that the downtrend might continue. But Stochastics moved upward strongly, flagging the likely uptrend that began in response.

By the middle of August, the uptrend appeared to be continuing strongly. But the Stochastics once again turned, anticipating coming weakness in the uptrend.

* * *

Conclusion

Momentum, oscillators work in similar ways and all help to identify and even anticipate reversals based on strengthening or weakening in the price direction.

The three reported here – RSI, MACD and Stochastics – are among the more popular and widely used momentum oscillators. However, there are many more, each designed to fine tune the tracking of momentum and its relationship to price.

Segment 2. Interpreting momentum changes

Oscillators provide a wealth of information and insight concerning price. While price charts focus on direction of movement, oscillators measure the speed of movement and peg likely reversal points. These points are based on distinctions between mid-range prices and the extremes (overbought or oversold).

The meaning of momentum

Oscillators may be centered or banded. Both provide information concerning price change and the degree of strength within a current trend.

Momentum tends to grow as trends continue. Thus, the longer a trend continues, the greater its momentum. However, the trend eventually exhausts itself. At this point, momentum is expected to begin slowing.

As momentum slows, it becomes increasingly likely that one of two three changes will occur:

1. Prices will level out and move into a sideways pattern. After this the trend may resume in the same direction.
2. Prices will level out for a period of consolidation, and conclude with a new trend moving in the opposite direction.
3. The trend will reverse quite suddenly and move in the opposite direction. This more sudden reversal is likely to be found at or close to resistance or support. The reversal occurs after failed tests of these price levels; or after a momentary breakout (often including gaps) that are immediately reversed and filled.

Centered oscillators

A *centered* oscillator begins with an assigned signal line or "zero value" line, and subsequent calculations move above or below that line. These types are effective at judging strength or weakness of a trend, and spotting changes in momentum.

The best-known centered oscillator is MACD. Two moving averages (26-day and 12-day) interact with one another and also in relation to a signal line. The signal line is an exponential summary of the past nine days.

The farther the divergence between the two MA lines, the more significant the meaning; and the crossover points of both MA lines in relation to the signal line further marks a change in price momentum.

Banded oscillators

While centered oscillators analyze momentum from an assumed zero point, banded oscillators employ two moving average bands representing price extremes.

The lower band equates with oversold, and the upper band equates with overbought. Typical and well-known examples are RSI and Stochastics. Both rely on signals crossing a predetermined line for the two extremes.

RSI usually is set at 70 for overbought and 30 for oversold, in an index range of zero to 100. As long as the calculated RSI is between 30 and 70, the extremes have not been met. However, movement approaching either line may be used as early confirming signals.

Stochastics uses a similar methodology. However, the ranges are 80 for overbought and 20 for oversold. Both RSI and Stochastics are bound between 0 and 100.

Oscillator signals - overbought and oversold

The primary use of oscillators is to monitor price movement not only by Western or Eastern reversal signals or volume, but also by indicated overbought and oversold conditions. Some signals are designed to lead signals, others lag.

One of the most useful aspects to oscillators is the signal that a current trend is weak, even if it is not about to reverse. Weakness signals the chartist to look for reversals signals in price patterns. Confirmation is the essential key, whether oscillators lead or lag.

A second aspect to oscillators is the value of divergence signals. When the oscillator contradics price, it signals weakness in the trend. Divergence may signal a bullish change (oscillator moving in a bullish direction versus price in a bearish trend).The combination of MA with other indicators – such as candlestick reversal signals, analysis of gapping price patterns, and conformity to the trading range, all make MA a useful technical confirmation indicator.

Divergence may signal a bullish change (oscillator moving in a bullish direction versus price in a bearish trend). Divergence may also signal bearish change (oscillator moving bearish while price moves bullish).

These divergences are symptoms most likely to be found as the oscillator index approaches or moves into overbought or oversold regions. In strong uptrends or downtrends, monitoring oscillators to find overbought or

oversold conditions may serve as a first warning that the trend is about to reverse.
However, overbought and oversold conditions may be false, so confirmation via other signals should be located before acting. The extremes may be a first sign of coming change, or could be false when not independently confirmed.
For example, Aetna experienced a sharp downtrend. Tracking RSI led to an oversold signal, which appeared confirmed by the upturn in price. However, instead of an uptrend, price moved into a consolidation pattern with a three-point breadth for more than a month.

It is also possible in very strong trends for oscillators to move into overbought or oversold condition and remain there for an extended period of time. The extremes do not always signal that reversal is going to occur right away.

For example, Sherwin Williams displayed an uptrend but at the same time, RSI moved into the overbought region and remained there throughout the remainder of the trend. After a pause, the uptrend resumed in spite of the RSI warning of a possible reversal.

Crossover

The tendency of oscillator MA lines or index values to cross thresholds (either signal lines or extremes) marks the beginning of change in a trend. Crossover validates divergence if and when the oscillator direction is contrary to price.

In this case, divergence by itself might not be especially significant. However, if the MA crosses the signal line or two MAs cross one another in a centered oscillator, then the importance of the divergence may be greater. The same applies to banded oscillators. Divergence within the mid-range is not as meaningful as divergence accompanied by movement into overbought or oversold areas of the index.

Both of these changes from one side of a signal line to the other, or from id-range to overbought or oversold, reveal a specific change in momentum. At such times, tracking price patterns and looking for reversal confirmation may strengthen the timing of entry or exit.

Momentum oscillators anticipate these reversal patterns but do not reveal the timing of their actual occurrence. For the timing, rely on the price patterns showing reversal. Oscillators may also act to *not* confirm indicated price reversal. For example, locating a strong price pattern reversal seeks confirmation. If an oscillator does not provide the crossover to confirm the reversal, it could mean the price pattern signal was false.

Positive and negative of oscillators

Be aware of the different purpose and effectiveness in momentum oscillators. Differences between centered and banded oscillators affect their

value to spot reversals.
Banded oscillators are the best signals to find overbought and oversold conditions. For example, RSI is a simple 0-100 index with clearly understood thresholds of 70 and 30. Movement above or below signal a change in momentu and-once confirmed-signal the time for entry or exit in response. In this example, momentum may lead price patterns in identifying the change in the trend.
However, these conditions in which the index moves out of the mid-range are not strong enough to act upon by themselves. They have to be confirmed by other reversal signals becasue they do not reveal the timing of change in the trend, only the change in its momentum.
Centered oscillators are less effective in identifying overbought or oversold conditions. These are more effective in anticipating momentum shifts from bullish to bearish or vice versa.
However, because they are based on MA analysis rather than calculated index values, the degree of changes tends to remain relatively small. So centered oscillators identify sentiment change and the strength or weakness of the trend.
A danger of relying on centered oscillators is that they may react in a manner similar to reversal when the actual condition is a short-term retracement against the prevailing trend. This is why confirmation is essential before acting on discovered changes in centered oscillators.

* * *

Conclusion

Momentum oscillators may lead or lag, providing initial indicators or confirmation. They should not be used by themselves to signal entry or exit.

Because moving averages and index calculations determine the oscillator trend, they cannot always accurately predict price reversal. However, when combined with price trends and price-specific reversal signals, oscillators are excellent technical tools for timing of trades.

Segment 3. Leading or lagging indicators?

Chart reading is a process of making judgments. The strength of a reversal indicator relies not only on how well it is confirmed by other signals, but also on whether it is a leading or a lagging indicator.

A leading indicator is presumed to appear in advance of a price reversal and also in advance of confirming signals. A lagging indicator confirms after a different signal has appeared and may also show up too late to make a trade decision.

Leading indicators

Among the best-known leading indicators are Relative Strength Index (RSI) and Stochastics. Both rely on formulated summaries of momentum to anticipate short-term changes in price.

Most analysis of leading indicators focuses on reversal signals during strong uptrends or downtrends. However, the leading indicator appearing during a period of sideways movement is more valuable because, lacking specific direction, this provides an initial signal of the next trend expected to occur.

Leading and lagging indicators are both used for spotting slowed momentum during a current trend, and both provide excellent forms of confirmation along with other reversal signals, notably in the form of candlestick indicators and tests of resistance and support.

For example, sideways movement made it difficult to predict what would happen next in the chart of Intel Corp. A three-month sideways trend appeared to be ending as prices rose toward the end of April.

However, the RSI contradicted this sign and then found confirmation. The overbought RSI signal occurred toward the end of March, forecasting a downtrend. Price moved upward the following month. However, note the strong bearish engulfing pattern at the last portion of the chart, confirming the earlier RSI signal.

This bearish sign and confirmation ended the sideways trend and forecast a downward movement. As the next chart shows, when expanding the Intel chart through June, a downtrend did occur as predicted by the bearish engulfing pattern.
The downtrend ended when RSI dipped into the oversold area in the third week of March and again in the first week of June. At the same time, a bullish engulfing pattern predicted an uptrend and confirmed the RSI early signal.

Leading indicators rely on past price movement and dominance among buying or selling activity. However, although the indicator relies on past movement, past price levels are considered secondary to the indicated change in momentum a leading oscillator provides.
Momentum measures the speed and strength of price movement, not price movement itself. As a result, even a seemingly strong trend may lose momentum and leading indicators are likely to anticipate the end of the trend before it appears in price levels.
For example, RSI summarizes in a simple index the average price advances with average price declines for the past 14 sessions. The current RSI level reflects whether the overall momentum during this time frame is trending in an upward or downward direction.
This application of a formula to create a range of momentum (in the case of RSI between 30 and 70 index value) summarizes the average of price movement and its likely meaning. Once the index exceeds 70 (overbought) or falls below 30 (oversold), the RSI acts as a leading indicator that a reversal is likely to follow.
The early signals provided by leading indicators are a primary benefit, notably during periods of sideways price movement. These also anticipate price weakness when divergence appears between the indicator and price. These are strong signals for timing of entry and exit.

A major disadvantage to leading indicators is that false signals do occur. A *whipsaw* – short-term price movement and reversal – can affect the oscillator and provide a false signal. With this in mind, leading indicators should be viewed as the first step in a trend change.

After a leading indicator appears, seek additional signals providing confirmation or contradiction, before proceeding. This cautionary approach ensures the most effective use of leading indicators.

Lagging indicators

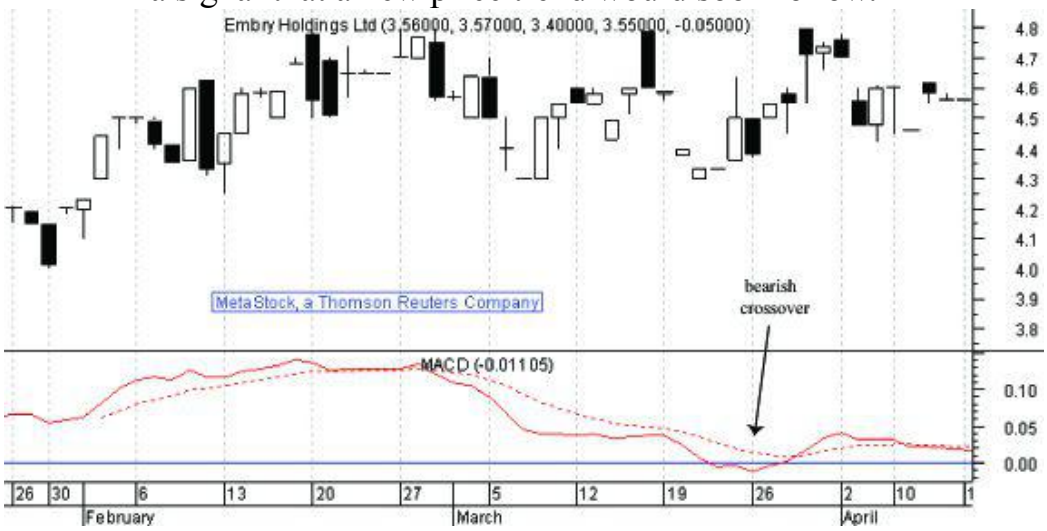
The lagging indicator appears after price movement. As a momentum oscillator serving as a lagging indicator, this confirms a signal first seen in price patterns, such as candlestick reversal or tests of resistance and support.

Well-known lagging indicators tend to rely on moving average analysis and convergence or divergence and crossover study. The best-known lagging indicator is MACD. Although it is a lagging signal, it is no less powerful than a leading indicator; it only shows up in a different location relative to price action.

Lagging indicators are most valuable as confirmation signals during current trends. As confirming signals, lagging indicators may provide confidence to traders that a price-specific reversal signal is valid and likely to lead directly into a reversal.

For example, Embry Holdings ended an uptrend in February and then prices moved sideways through mid-April. How do you recognize when a new trend will begin?

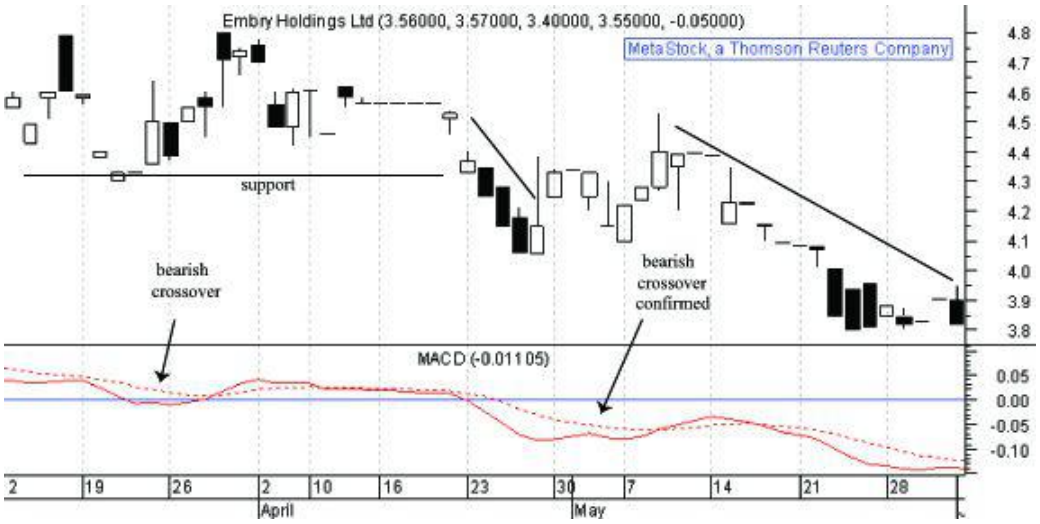
The MACD line crossed into bearish territory in the third week of March. This was a signal that a new price trend would soon follow.



The MACD bearish crossover was the first sign that the sideways movement was likely to end. When the chart is extended through another month, a downtrend did appear. It seemed to have a short life; however, at the same time, MACD confirmed the bearish trend by again moving below the signal line and remaining there.

After a short period of upward-trending days, a strong downtrend began just as MACD had predicted. In fact, the MACD line continued falling in negative

territory through to the end of the chart, indicating that the downtrend was holding momentum.



The major disadvantage to lagging indicators is that they might show up after a reversal has already occurred. However, reversals do not always occur quickly or immediately.

So a slower-developing reversal may be spotted in a price pattern and then confirmed. In this sense, lagging indicators are quite effective in adding confidence to the likelihood of reversal.

Indicators in perspective

Momentum oscillators that lead or lag may not always be as sensitive to price patterns as traders desire. They are not consistent. This is why they provide only a piece of the reversal puzzle. Confirmation is essential; but momentum indicators are among the best confirmation signals.

If the period of study used to create oscillator values is decreased, it may create more false signals. If the period employed is increased, the level of signals might be too unresponsive to momentum shifts that the oscillators are ineffective. Longer average periods equate to reduced signal generation.

Segment 4. Oscillators used with candlestick signals

Momentum oscillators give out strong signals, but these are not always reliable. The key to using oscillators effectively is to coordinate them with other signals. Reversals found in candlestick price patterns are effective as cross-confirming tools.

Causes of low reliability

The low reliability of oscillators is not universal. However, it is a problem to be aware of, especially in specific circumstances. These include:

1. *High volatility.* When price movement is erratic, especially accompanying a breakout from a previous price range, the averages used in oscillators are impacted. So volatility may easily distort movement of the MAs and provide false signals. The chart of COSCO Pacific demonstrated this point. Price movement was very erratic and moved below support before reversing higher to move above resistance. The strong upward price movement brought MACD across the line above the signal and into positive territory. But the reliability of this move was not absolute. MACD was distorted by the strong upward-trend sessions.

2. *Short-term but substantial price movement.* If the stock price moves rapidly, it may lead to a specific overbought or oversold signal in the oscillator. Reacting to oscillator signals at such moments is not necessarily wise. Google's price moved rapidly upward in the second half of its chart. With no sign of the uptrend ending any time soon, the RSI line moved into the overbought area. However, by the end of the period, the line had

retreated back below that line. This was a false signal.

3. *Recent substantial price moves.* When price moves quickly in one direction, oscillators are going to move as well. At these times, finding reliable signals is difficult and, by themselves, oscillators are not entirely reliable. The signals of overbought and oversold are more significant during times of more moderate price trends. Macau Investment Holdings exhibited two possible false signals, one in each direction. At the start of the chart, prices fell quickly, leading to a decline within the negative side for MACD. This was followed by a two-month period of consolidation. At the end of the chart, prices once more moved, this time rapidly upward. This brought the averages underlying MACD into a double crossover as well. But given the speed of the uptrend, the MACD change could be a false signal.

Oscillators as lead or lag confirmation

A momentum oscillator is not always going to lead, even if it is identified as a leading indicator. A lagging oscillator will not always lag either.

This is the problem many chartists have in interpreting the meaning of oscillators and the way they move, signal, or diverge. Every signal found in an oscillator has to be confirmed through traditional signals like double tops or bottoms, gapping price action, or volume spikes.

In the case of Bank of America, numerous price indicators were found at the bottom of the downtrend:

1. A double bottom, indicating the downtrend had ended and a new uptrend should be expected.
2. A series of price gaps. (The first two were invisible, but analysis of the price pattern reveals interday gaps between close and open.)
3. A building level of volume over several sessions.
4. A volume spike.

These confirming indicators followed the leading indicator provided by RSI. It had fallen into the oversold category, the first sign of a turnaround. Then the indicator moved upward into the mid-range area, signaling the conclusion of the oversold condition.

Oscillators are most effective when they indicate or confirm a separate signal, especially one based on a different form of information. Price pattern reversal signals are good examples of reversal confirmation or lead indicators.

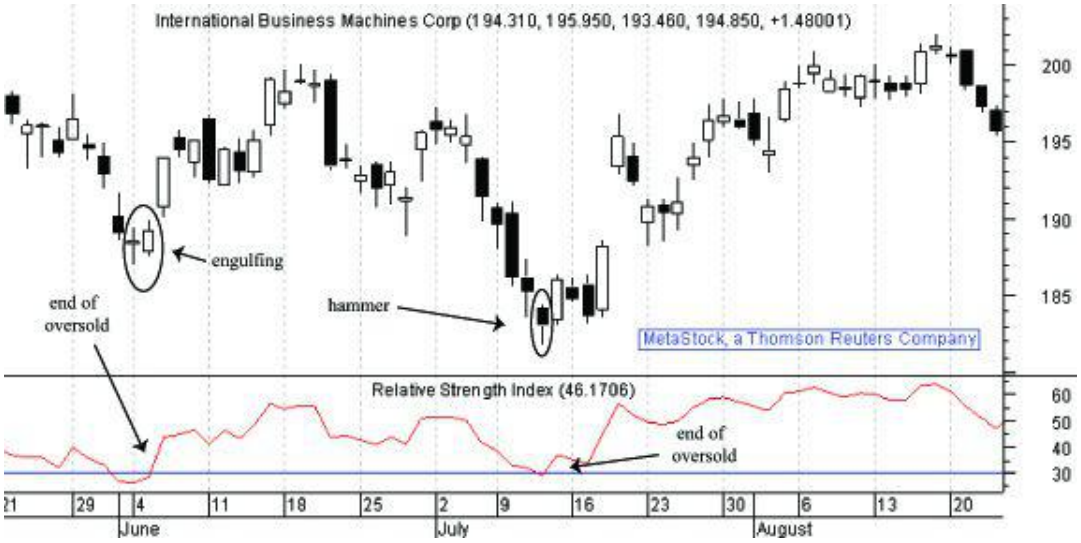
Price patterns and, specifically, reversal signals, employ a different set of data than oscillators; so when the price pattern and oscillator predict the same change, the indicator is more powerful.

Examples of candlesticks with oscillators

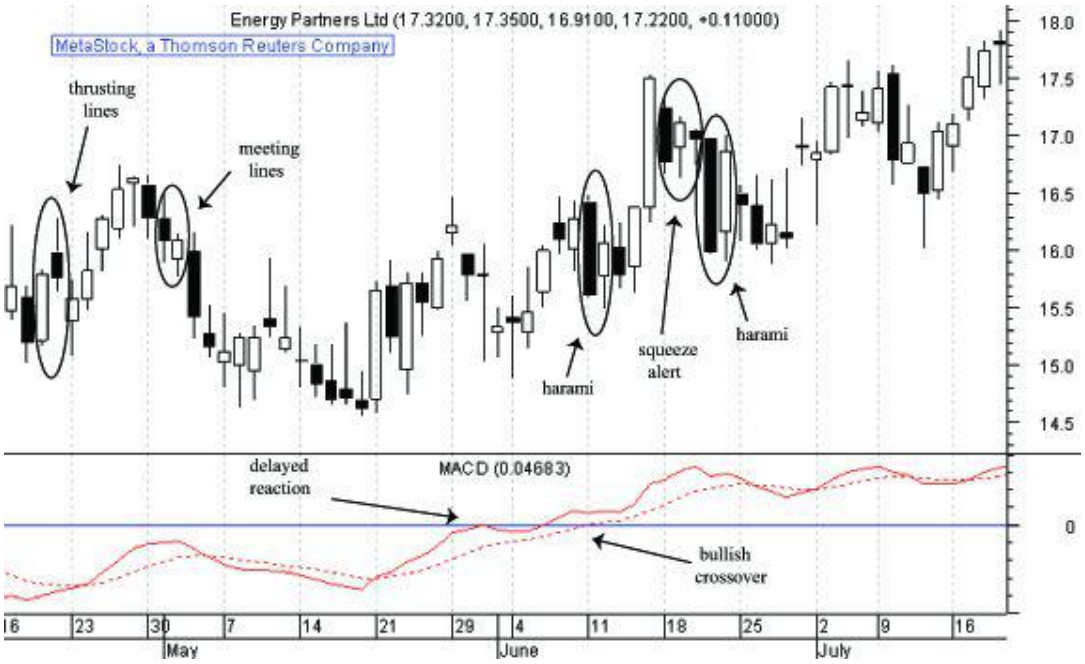
Many strong candlestick reversals provide generally reliable information. However, they need confirmation just as much as any other signals. For example, the chart of IBM followed a predictable pattern.

First, prices were declining and the downtrend concluded with a clear bullish engulfing pattern. This occurred at the same time the oversold condition ended, confirmation of the bullish signal.

Second, prices declined again and ended with a single-session hammer, predicting a reversal and new uptrend. At the same time, RSI dipped into the oversold area beneath 30, and then moved rapidly up but still within mid-range.



Another series of reversal signals was found in the chart of Energy Partners. Several bullish candlesticks led this and were confirmed by MACD:



1. Thrusting lines, a two-session bullish signal.
2. Meeting lines confirming the previous signal, even though price then fell.
3. A delayed reaction in MACD, momentarily crossing the signal line into bullish territory before retreating.
4. A strong MACD double crossover into bullish territory.
5. A strong bullish harami, confirming a new bullish trend.
6. A bullish squeeze alert, a three-session indicator.
7. A second bullish harami – even though prices fell after this for a few sessions, the bullish reversal did occur afterwards.

Conclusion

Momentum oscillators create forecasting insight, often in advance of current price reversal. This occurs when overbought and oversold conditions appear, or when the oscillator diverges from the price direction.

Oscillators may lead or lag. However, they serve the purpose of (a) leading the reversal along with subsequent confirmation, (b) fortifying a separate reversal signal by confirmation, or (c) contradicting another signal.

Contradiction is just as important as confirmation. It tells you to not act until clearer indicators appear.

PART 8: CONFIRMATION

Segment 1. Why is confirmation the key process in technical analysis?

Many technical "systems" are set up and based on single indicators. The problem with reliance on solitary signals is that nothing provides absolute assurance of reversal.

Indicators are only the first step in a two-part (or multi-part) system. Confirmation is the second and most important part of that process.

The lack of reliability in price movement

Even with confirmation, the indicated significance of a signal cannot be known at 100% reliability. For this reason, several attributes in your technical analysis program are essential. These include:

1. Diversify your entry risks. Never place more into a trade than you can afford to lose because of failed signals.
2. Spread your exit risks. Don't close the entire position unless you are certain that you want to take profits and leave the position.
3. Be always aware of proximity. Remember that reversal at or near resistance and support is the most likely place it will occur, especially if price breaks through with gapping movement.
4. Never trust any signal without confirmation. Remember, price movement in the short term is chaotic and unreliable. Confirmation makes it more likely that your timing for entry and exit will improve.
5. Use multiple indicators. Expand your confirmation universe to include price patterns and Western indicators (especially tests of resistance and support); candlestick signals; momentum oscillators; and volume.

For example, in the case of the Walt Disney Company, the direction was unclear when price alone was studied. However, several important signals appeared within a short span of time:

1. The double bottom tested support but did not create a new downtrend.
2. Shortly after that test, a bullish engulfing pattern developed. However, price levels did not move strongly right away.
3. The volume spike was a convincing signal that an uptrend rally was underway.
4. MACD was in positive territory through the chart, and the fact that it did not decline was encouraging, further supporting the multi-signal indicator of an uptrend in progress.

<u>Confirmation strengthens judgment</u>

Every trader makes judgments about the timing of entry and exit. Looking at a current chart and determining the strength of signals is difficult; looking back to past patterns, turning points are easily spotted.

The uncertainty about current signals is reduced when strong confirmation is added to an initial indicator of reversal. The proof of likely reversal is found in this process, and the stronger the confirmation, the more confidence you gain.

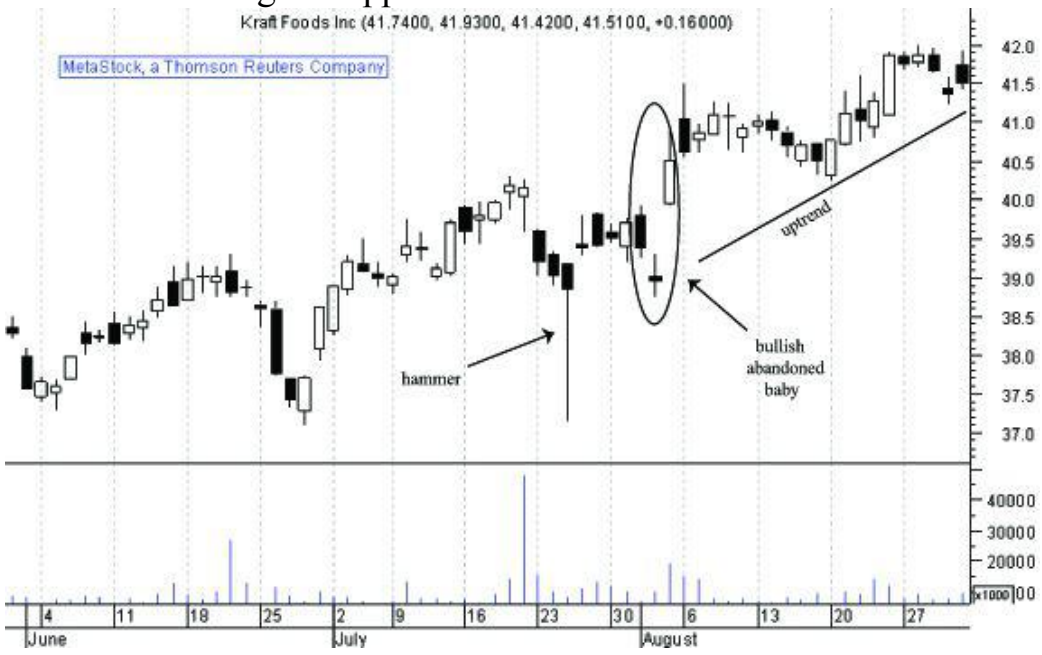
A very contradictory signal and confirmation was seen in the chart of eBay. MACD dipped into negative territory briefly but then quickly bounced back out. At the same time, a *bearish* doji star appeared with a very large upside gap. This is considered a bearish signal but the big gap strengthened this indication.

In spite of the strong bearish indicator, the price moved rapidly into a strong uptrend. This proves the point that even exceptionally strong signals can be false, and prices may move in the opposite direction.
In the case of eBay, the contradiction between the bearish candlestick and the bullish MACD should have led a trader to wait until a more definite signal could be found.

Another seemingly strong set of signals and confirmation was seen in the chart of Kraft Foods. This consisted of:

1. A double bottom, indicating a coming uptrend.
2. An uptrend as expected, including a breakout above resistance.
3. A bearish piercing lines signal, indicating that the breakout was about to fail, and prices retreat back into the established trading range. This bearish signal was quite strong due to the proximity of the signal to the breakout.
4. A volume spike, supporting the interpretation of this set of signals as a confirmed sign of a downtrend about to occur.
5. Although MACD had moved into positive territory by the conclusion of the chart, the bearish signals were quite strong.

But what happened to Kraft Foods? Expanding the chart another month shows that the bearish indicators, even confirmed, were false. Soon after the volume spike, two additional signals appeared:



1. The hammer, a bullish single-session indicator was quite strong not only because of its placement but also due to its exceptionally long lower shadow. This signaled that the bears were not successful at driving prices lower; momentum was gone.

2. Another very strong bullish signal appeared in a three-session signal called the bullish abandoned baby. The title refers to the near-doji session in the middle, preceded and followed by price gaps. As predicted, these two signals together contradicted the previous bearish confirmation, and led to a bullish move.

A strong signal and confirmation was found in the chart of First Solar. MACD moved into bullish territory and at the same time, a very bullish candlestick signal appeared, the morning star. This consists of three consecutive sessions, black followed by a downward gap, then a white session, an upward gap, and another white session.
Taken together, MACD and the bullish candlestick confirmed the likelihood of the end to the sideways price movement and the start of a new uptrend.

The more confirmation you find, the more likely it is that the reversal is going to occur. For example, First Solar delivered on the confirmed upward indicator with two strong signals:

1. The sustained uptrend was convincing in its angle and speed, representing the response to the previous positive signs.
2. The small dip midway in the uptrend created a second strong bullish signal, an engulfing pattern. This can be interpreted as a reversal of the small dip in the uptrend, or as a confirming signal that the established uptrend was going to resume.

Confirming price as well as the trend

Traders tend to focus on price as the point to seek reversal signs. However, the trend itself and its curve also serves as an important initial signal.

It is possible to spot an interruption in the trend, and then a price resumption. For example, Mattel's chart showed an uptrend throughout the entire period. It was interrupted by a retracement of several sessions in mid-July.

The uptrend continued immediately after the retracement. Note also that the retracement ended with a long-legged doji session, a clear reversal sign hinting that the uptrend was about to resume.

At the very moment the uptrend continued, the RSI line moved into the overbought area. This could have been interpreted as a bearish warning assign and, in fact, if it had moved any further, it would have required caution and possibly an exit.

However, the RSI line remained barely in the overbought section and then very quickly retreated back into mid-range. This meant that the move was caused by the very large upward gap between retracement and trend resumption.

Confirming continuation as well as reversal

With the focus among traders on reversal indication, it is easy to overlook the importance of continuation.

Thus, traders in positions are focused on reversal signals and may easily be deceived by false signals. However, continuation indicators are just as important. Among these are many specific candlestick formations, including neck lines. For example, Hecla Mining confirmed its ongoing uptrend with a bullish neck line indicator.

This showed up just before prices appeared to begin moving sideways; however, the trend was strong enough to quickly resume a strong upward movement.

Continuation patterns may also be bearish, and will appear during a downtrend. For example, a bearish separating lines pattern was found in the chart of China.com. This continuation pattern was found after a strong uptrend, but even so its interpretation can mean one of two things: reversal of the uptrend or continuation of a brand new downtrend.

The confusion was cleared up by a strong form of confirmation. The RSI indicator moved well above the 70 index line. It did not just barely move higher, but was decisive and strongly cautioned that the stock was overbought.

In fact, price levels then began a clear and consistent descent, as predicted by the bearish separating lines and confirmed by RSI.

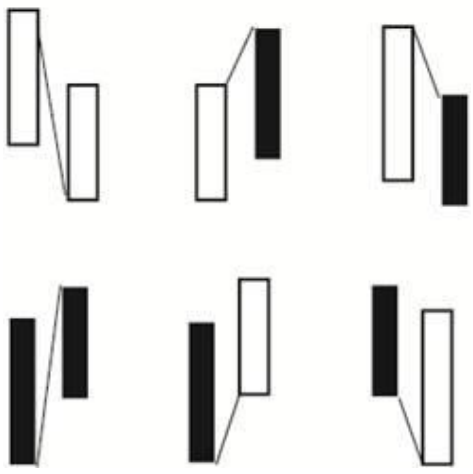
Subtle forms of confirmation

Beyond easily recognized confirmation signals, you may also find confirmation in more subtle forms of change. These include:

a. Hidden gaps. Many price gaps occur without obvious spaces between sessions. These are more difficult to spot, but just as important as visible gaps. Some gaps are "common gaps" and occur often without any importance. Others, though, are strong reversal signals and should not be ignored. Hidden gaps come in a few different forms. The next illustration Summarized many forms of hidden gaps that can be found on virtually every stock chart.

These gaps are hidden in the sense that a session's real body overlaps the previous session. However, the space between closing price of session one and opening of session two creates a price gap.

hidden gaps



JetBlue Airways experienced numerous hidden gaps on its chart during a very strong uptrend. In fact, the speed and angle of the uptrend should have caused

traders to be concerned about the changes of reversal. The hidden gaps confirmed this potential problem.
Relative Strength Index moved into the overbought area. However, this was a mid move and did not last. So by itself, RSI was not convincing as a form of confirmation that the uptrend was over.
Two other developments did make a convincing argument for reversal, however. First was the frequency of the hidden gaps. When this occurs during a rapid trend, it increases the likelihood of reversal.
The second signal was the appearance of the long-legged doji near the top. When this appears after an exceptionally strong uptrend, it demonstrates the struggle between buyers and sellers. The side dominating the trend usually loses, so in this case, buyers had lost momentum and sellers were set to take over.
Soon after the appearance of the long-legged doji and its reversal significance, the trend did reverse and a downtrend began. Even though the downtrend ended at the conclusions of the trend line, note that after two upward-moving days, it appeared to resume.

b. <u>Trend line endings.</u> A trend line is a simple straight line drawn below an uptrend or above a downtrend. It ends when the line runs into prices moving in the opposite direction.
However, what appears to be the end of the trend might be a momentary price move that is going to reverse. So the trend line by itself requires separate confirmation. This occurred on the chart of Abbott Labs.

The trend line in this case was interrupted by a few sessions retracing in a downward direction. However, this was not a reversal but a momentary retracement of short duration. The uptrend continued as soon as the downward-moving sessions failed to drive price any lower.

c. Repetitive doji sessions. The narrow range of a doji by itself is not a reliable reversal indicator. However, when you find three or more consecutive sessions consisting of doji or near-doji ranges, it reveals a conflict between buyers and sellers.

The repetitive doji pattern is exceptionally strong when shadows are lengthened. For example, Mongolian Mining experienced an unusual five consecutive doji sessions. The long lower shadow on the first of these five provided a clue that a new trend was about to begin, but the direction was not clear.

At first, it appeared that an uptrend was going to dominate the price in response to the doji sessions. However, this did not last long and a very isolated volume spike marked the end of the uptrend. This was soon followed by a long black candle session marking the beginning of a strong downtrend.

Conclusion

Confirmation takes many forms and needs to be placed in context. Seeking exceptionally strong confirmation might demand the use of more than one extra indicator.

Price movement is unreliable. Confirmation improves judgment concerning the timing of entry and exit in reaction to reversal signals. Some confirmation signals also provide continuation signals, which are just as important because they tell you to not exit a position.

Some confirming signals are not easily spotted. These include hidden gaps, trend line patterns, and repetitive doji sessions. Finding confirmation is not limited to a singular type of indicator, but should be developed to include tests of many different ones.

Segment 2. Entry and exit timing via confirmation

The timing of entry into positions and exit from positions is the key to effective use of technical analysis. Because short-term price movement is difficult to predict, traders rely on confirmation and need to distinguish between strong and weak signals.

Swing trading, the basic timing strategy

Traders may employ techniques of swing trading to time entry and exit. Under this system, traders wait for recognizable exaggerated price movement and then enter positions. Exit occurs within the next few sessions, when the exaggerated price movement is expected to retreat.

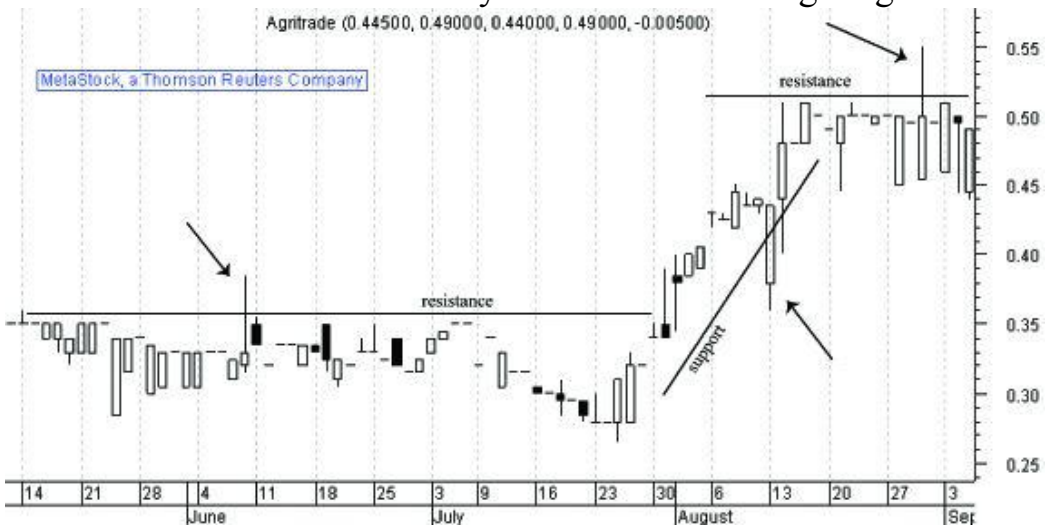
The chart of PYI Corporation demonstrates the technique. A single session's downswing concluded with a period of indecision and then an easily noticed dip. This was an opportunity to either enter a long position, or to close a short position.

MACD remained in the negative for nearly two months further before an opposite signal was found. The up swing coincided with MACD confirmation as the oscillator moved into positive territory.

This version of timing may be based solely on price movement, even without confirmation – although finding confirmation is always preferred. When price moves away from the typical daily breadth of trading, reversal likelihood is quite high.

It is not as easy to use this technique in highly volatile issues, as prediction of reversal is more difficult. For example, Agritrade provided some interesting swing trading opportunities. The single session jumping above resistance was the first.

When support began accelerating to the upside, a two-session dip below was another chance to enter a swing trade.
Finally, with establishment of a new resistance point, a one-session shadow moved above and retreated on the same day back into the trading range.



The swing trading approach is contrarian. While a majority of traders over-react to news, such as negative earnings announcements or disappointing guidance for future earnings, swing traders avoid emotional over-reaction and exploit exaggerated moves in price.
The approach will work in those isolated moments when price movement is extreme. Many systems can be employed to time the swing by degrees:

1. Percentage-based systems, in which exit is programmed after a specified degree of price movement.
2. Trailing stop or stop loss, automatically generated trades based on price levels.
3. Signal and confirmation.

The third approach – signal and confirmation – is probably the most applicable for swing trading. Those traders interested in very short-term swing timing are not as likely as other traders to rely on percentage movement or special orders, given the volatile nature of price movement itself.
Timing in swing trading is based on recognized price movement in two steps – away from the existing breadth of trading (when entry occurs) and then a return to normal price levels (when exit is timed).
When price dips well below the typical range, the opportunity is clear. A trader buys at this signal point and waits for price to rebound. When it does, the position is closed.

For example, the chart of CA Inc. provided two clear examples of entry and exit points. The first one moved below support, which was the entry point, and remained there for three sessions. Once it moved back into range, the exit point was clearly identified.

Second, after a fast uptrend back to the original resistance level, the price moved above and stayed there for four sessions. The first violation of resistance was the swing signal for entry; and the fast retreat back into range signaled exit.

A problem arises when price spikes to the upside. Swing traders are supposed to short stock at this point, wait for the price to retreat, and then close. But for many traders, shorting stock is too expensive and risky, especially in the marginal profit potential of swing trading.

Consequently, many traders deal only with the downside swings and limit their activity to buying stock to open, and then selling to close.

A solution to this is the use of long puts. These options are bearish just as short stock is, but market risk is limited to the cost of the put, which is quite low. So for a very small degree of exposure, swing traders can play both bullish and bearish swings.

For example, China Information Technology experienced an uptrend culminating with a one-session jump with a strong upper shadow. The indication was reversal, based on the Bollinger Bands all moving below price levels. At that point, the bearish entry was found; and it led to a long-term downtrend.

Options can be used for swing trading on both sides. For example, after a downward-moving price swing, traders can buy calls, wait for the swing to reverse, and then sell.

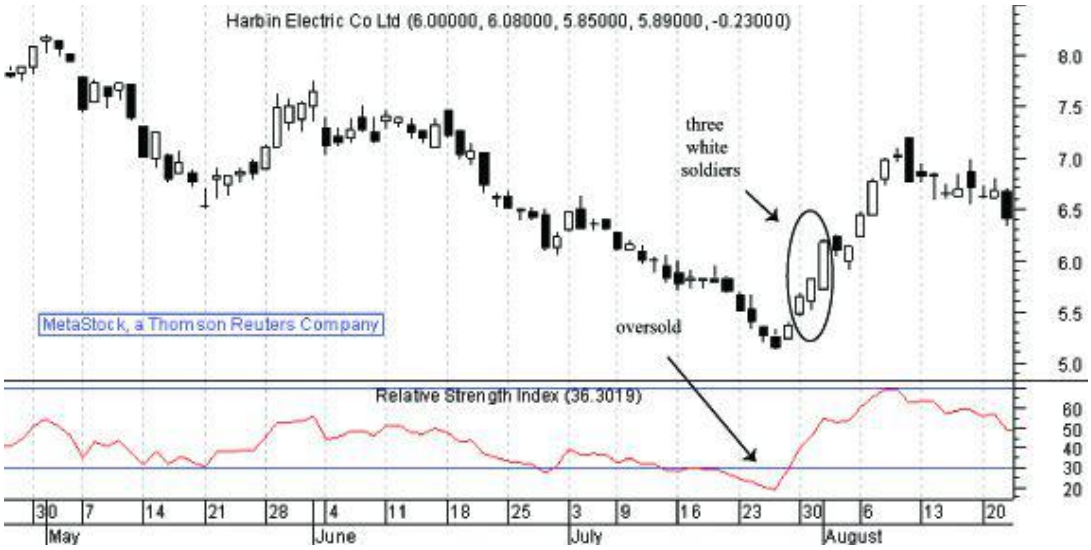
Options solve many problems for swing traders, while maximizing leverage and enabling diversification due to the low cost of options. Used in swing trading, long options add advantages to the strategy and even soon-to-expire options work.

With little or no time value remaining in the option premium, at-the-money or in-the-money contracts tend to track stock price movement point for point.

Timing, the key to technical analysis

Timing is essential for longer-term trading as well. Swing trading and day trading relies on being able to spot very short-term exaggerated price movement and acting quickly. It is one approach that does rely on confirmation out of necessity.

Even so, confirmation that appears at the same time as an initial price move certainly improves timing of the swing trade. Harbin Electric demonstrated how this occurs on its four-month chart.



The gradual downtrend ended with an exceptionally clear oscillator signal. RSI declined to the 30 value and then moved clearly through it, which took place right before the downtrend ended.

How could you be sure the trend had turned to the upside? The three while soldiers confirmed that a new uptrend had begun. These signals occurred in very close proximity.

Confirmation occurring at the same moment as the price movement may take many forms. Another example was seen in the chart of Ross Stores. In this situation, RSI provided no clear signal of overbought or oversold. However, the signals for continued uptrend were found in other ways.

The trend line is actually the same uptrend with a brief interruption. The four-session decline could have marked a reversal and at the time it was not certain what would happen next. But the exceptionally large lower shadow in that first lower session demonstrated a lack of momentum among sellers.

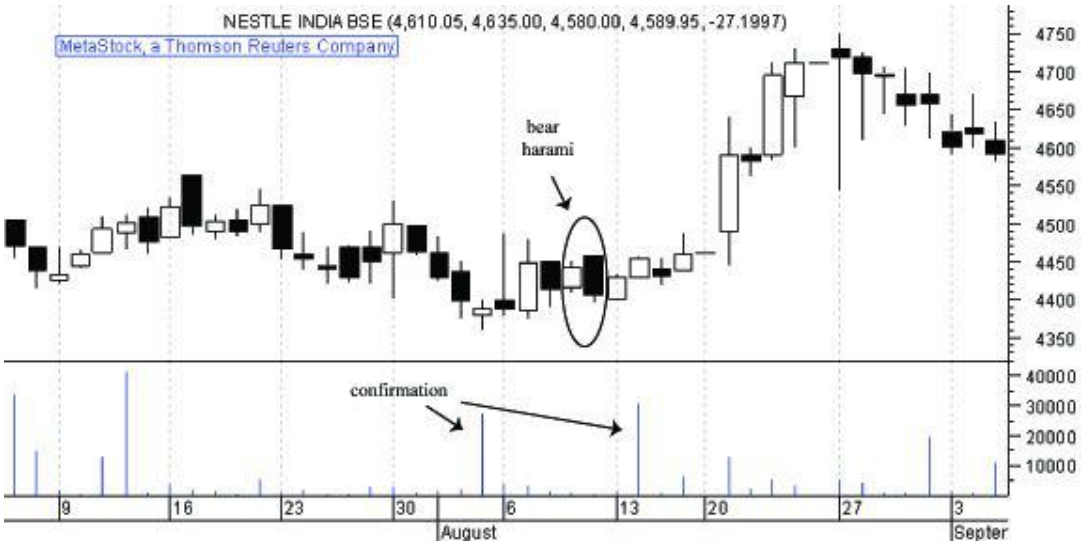
This signal was confirmed by the volume spike on the same day. The uptrend quickly resumed, making this series of movements and volume exchanges a clear continuation signal. This strongly hinted that a downtrend would come next.

The problem of failed reversal signals

Every trader faces a problem of failed reversal signals. Even the strongest signals may mislead traders by providing confirmed, exceptionally strong reversal signals that do not materialize. The purpose of confirmation is not to provide certainty in every case, but to improve your percentages of well-timed trades.

For example, the chart of Nestle India moved sideways for the first half of the period shown. And then two volume spikes appeared, and in between was a strong bearish harami signal.

In spite of strong signal and confirmation, the price moved upward and not down. This is a typical example of a failed reversal. The false signal provided in the candlestick sessions, confirmed by the volume spikes, was encouraging. But even so, price moved opposite from expectations.



Because failed signals occur even with the strongest confirmation, it makes sense to limit exposure in any one trade. This is not the same as diversification.

With diversification, you spread capital among many different positions, each subject to dissimilar market risks. This ensures that even in the worse market movement, consequences will not apply to the entire portfolio.

Limiting exposure within single trades is different. It is a technique for managing market risks within a single trade, even when the larger portfolio is well diversified. In timing entry to what appears a strong reversal after a long downtrend, how much should you invest?

Wal-Mart was a good example of how exceptionally strong signals might not work out as expected. On its chart from mid-February through mid-April, sideways movement ended with a strong uptrend.

At the very end of the chart, a series of upward-moving sessions concluded with a bullish engulfing pattern, a highly reliable signal. This bullish signal was further confirmed by the move in MACD into bullish territory.

Even with what clearly seems like a confirmed reversal indicator, the signal may fail. The chart, expanded another month, makes this point. Notice that immediately after the bullish harami, the price gapped lower by three points. At the same time, MACD quickly retreated back into negative territory.

The Wal-Mart price then returned to its sideways price movement, but in a lower range than previously.

If you are dealing with reversal-timed entry into a position, limiting exposure can take several forms. These include:

1. Identifying bail-out points and placing stop loss orders on stock trades. In those cases when price moves against you, cutting losses early is a prudent strategy.
2. Limiting share and dollar amount to a pre-set percentage of your capital. For example, you may decide to limit exposure to any one trade to 10% and select the number of shares approximating this level.
3. Using long option contracts in place of stock. This technique limits your potential loss to the cost of the option. Typical, an at-the-money option with three months until expiration will cost less than 5% of the value of 100 shares of the underlying stock.

Strong and weak confirmation

Weak confirmation is found in signals providing reversal likelihood, but not strongly. So a relatively small price movement of less than certain significance, coupled with a weak confirming indicator, is more likely to fail.

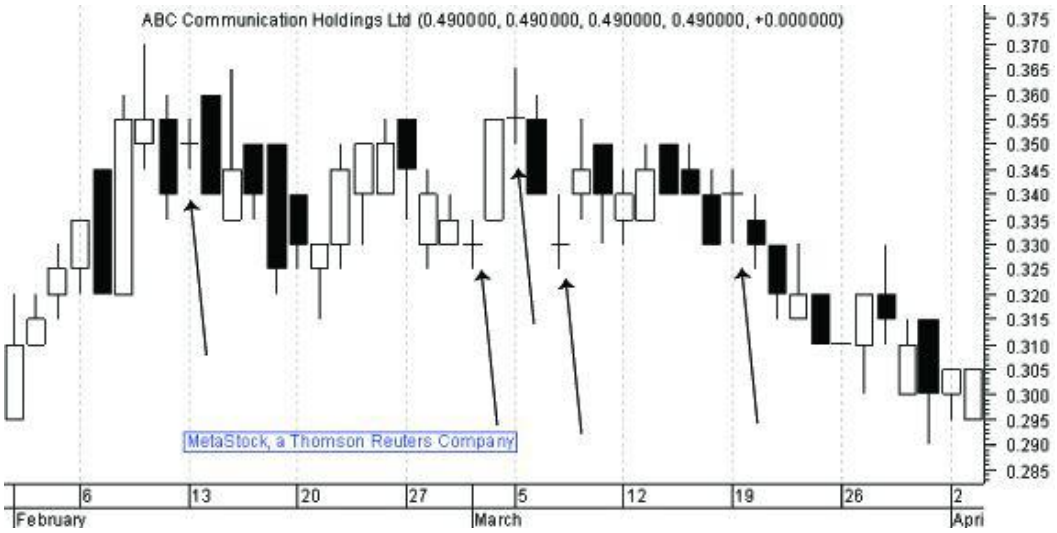
The PG&E chart provided an example. The three black crows acts as bearish reversal about four out of five times it appears. However, even with the small uptrend, this one did not lead to reversal, but was a false signal.

Making matters worse, the apparent bearish signal was confirmed with a volume spike and two subsequent high-volume days. In spite of all the signs, the price next moved upward. This signal was “weak” because of the very short uptrend.

Another weak confirmation signal is one offering only about 50% certainty. A signal that reverses only 50% of the time is no better than a random guess. So these can be discounted as far as their value of confirmation.

Typical among 50% candlestick signals are doji signals (dragonfly, gravestone and long-legged). For example ABC Communications ended an uptrend by moving sideways for nearly two months.

During this period, five specific sessions were long-legged doji days. But only the last one signaled an actual downtrend – in other words, the doji was not of any value as reliable timing for a trade.



A third situation likely to provide weak confirmation is a reversal at mid-range (versus one at the edges of the range). Yahoo exhibited a volatile trading range for a long period of time, and then gave out several bearish signals. All occurred at mid-range even while the price trend gradually moved higher.

First was the move of MACS into bearish territory. This was a fairly strong decline, and should have drawn attention – especially since it was very quickly confirmed with a bearish harami signal.

With prices then trending higher, the next move seemed less than certain. The very large upper shadow was very bearish as it indicated a complete breakdown of buyer momentum. Even so, the price trend continued upward and trended above previous levels. This mid-range set of signals was entirely false and misleading.

Strong confirmation consists of very clear and precise reversal signals, and equally strong confirmation. These are never 100%, but the certainty of success can be as high as 80%. For example, Caterpillar had a set of bullish signals appearing at the bottom of a downtrend, right at support.

First was a volume spike, immediately followed by a rate but strong bullish signal, the morning star. This is a three-session signal starting with a black session, then a lower white, an upside gap and finally, a higher white session.

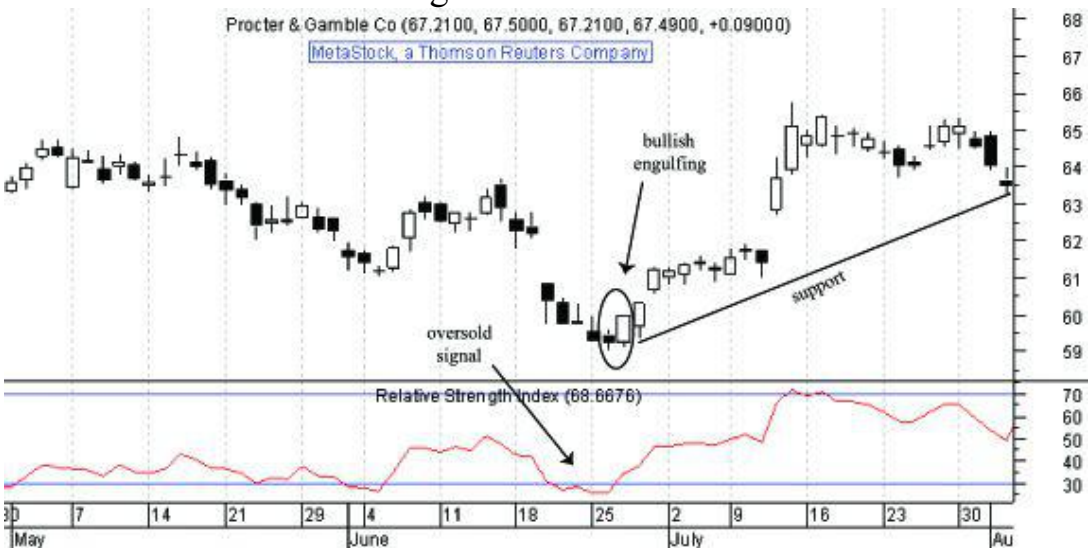
After this strong bullish signal and confirmation, prices did not move for six sessions. However, a second, stronger volume spike marked the start of a new

uptrend. Because this action all took place at the newly set support level, its strength was greater than a mid-range signal.

Among these kinds of confirmation are candlestick signals with a high level of reliability. Examples of these include the engulfing pattern, a commonly occurring signal and one with very strong reliability for reversal.

Procter & Gamble provided one example of this. First, RSI trended downward and into oversold territory. Immediately after, a bullish engulfing pattern showed up. Based on the downward gap a few sessions earlier, the odds of reversal were greatly increased.

Price reacted by moved modestly upward through the remainder of the charted period. This signal was strong based on the location of the bullish harami. Such signals never provide 100% certainty; but when they show up at the end of the trend, reversal chances are much stronger.



When price moves toward or crosses resistance or support, reversal is most likely. So when you see this occur, look for confirmation. When you find price gaps along with candlestick and oscillator reversal signs, chances for price to retreat back into range are at their highest.

For example Matson Inc. had a very strong sideways level of resistance and support in a fairly narrow breadth of trading. The very strong upper shadow of the long-legged doji made the signal clearly bearish.

Even though doji sessions are not very reliable, when they exhibit shadows like this, the significance cannot be ignored. This revealed lost momentum among buyers, but more important was that it also moved above resistance. This greatly increased chances of reversal.

The reversal did follow, and in fact was so strong that it trended below support. This happens often; one side of the trading range is challenged unsuccessfully, and the next step is to move to a challenge of the other side.

Conclusion

For all entry and exit decisions, confirmation is the essential ingredient. Being aware of what defines strong or weak confirmation helps improve timing.

The major influences on whether confirmation is strong or weak are: exceptionally strong or weak signals, highly reliable reversals, and proximity of reversal signals to resistance or support.

Segment 3. Sources of confirmation

The process of confirmation includes many possible variations and signals. All evidence gathered is legitimate, although some signals are invariably stronger than others. Chartists are left with the task of determining the strength or weakness of particular signals.

This judgment is gained with experience. However, it can also be acquired through observation, seeing the cause and effect of specific changes in price based on combinations of initial signals and confirmation; the momentum of change; and proximity of signals to resistance and support.

Candlestick and candlestick confirmation

One of the strongest combinations of signal and confirmation occurs when two candlestick signals appear in close proximity to each other. When both foreshadow the same event (reversal, for example), the likelihood of reversal is strengthened considerably.

Television Broadcasts exhibited an exceptionally strong double signal at the top of an uptrend, consisting of two bearish piercing lines. The trend halted there and immediately reversed top the downside.

The type of candlestick signal defines the strength or weakness of the signals. Certain types of signals (such as engulfing patterns, three white soldiers or three black crows, and long candlesticks) are normally very strong. Other signals (notably singular dragonfly, gravestone and long-legged doji days) are relatively weak.

Weaker candlesticks may be excellent forms of confirmation if they appear in the right placement, such as at the top of an uptrend or the bottom of a downtrend – and when additional candlestick reversal signals are found at the same time.

For example, G S Global Corp. showed two bear harami signals in close proximity. The first was quite weal as it did not appear after an uptrend. The second one, however, was at the top of a brief uptrend, and it led right away to a reversal.

Candlestick and Western confirmation

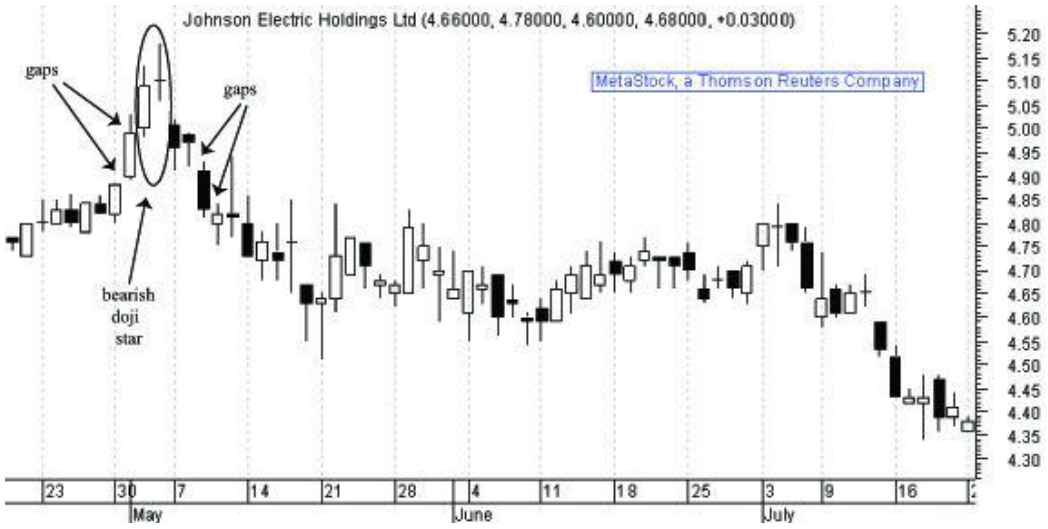
A frequent event is the coexistence of candlestick reversals with traditional Western signals. Among these, double tops or bottoms occurring at the same time as candlestick reversals are likely to lead to reversal a majority of the time – especially if they are found at resistance or support.

The chart of Qualcomm provided an example of this. The bearish doji star is a three-session signal and a strong one as well. At the same time, the price dipped below support and formed a double bottom.

As expected, price turned immediately into a sharp uptrend lasting a full month. This often occurs when support is violated with a confirmed reversal signal.

Another example of the combined candlestick and Western reversal/confirmation involving gapping price movement was found in the chart of Johnson Electric Holdings. Very fast rising prices were characterized by repetitive gaps, always a signal that the trend may reverse. This also moved above resistance at the same time and culminated with a bearish doji star.

As the price trend reversed, a similar gapping pattern was seen on the way down, confirming that the move above resistance could not hold.



<u>Candlestick and oscillators confirmation</u>

Oscillators by themselves are not reliable at all times; but when they are found along with candlestick signals, they are strong forms of confirmation. Oscillators may be the deciding factor in the timing of entry or exit due to this confirmation attribute.

For example, Seoul Broadcasting System formed a bullish meeting lines signal, but placement was not strong enough, as the preceding downtrend was brief and

did not cover many points. The MACD line confirmed the reversal, however, by moving into bullish territory.

Even so, prices continued moving sideways for another month before the uptrend began as a delayed reaction. This uncertainty was also found in MACD, which hovered at the signal line for the same length of time.

Even so, oscillators should be used only in combination with very strong reversal candlesticks and preferably at the end of an especially strong trend. Otherwise, false signals are likely.

Showing up after a relatively weak trend, an oscillator may not be a reliable confirming signal. For example, Comcast Corporation displayed a bearish side-by-side black lines indicator, a continuation pattern. As MACD also moved down into bearish territory, the signs pointed to continued downward movement.

However, these signals both proved false. After two weeks of sideways movement, the price moved into a new uptrend, reversing the pattern in spite of the continuation signals and confirmation.

Western and Western confirmation

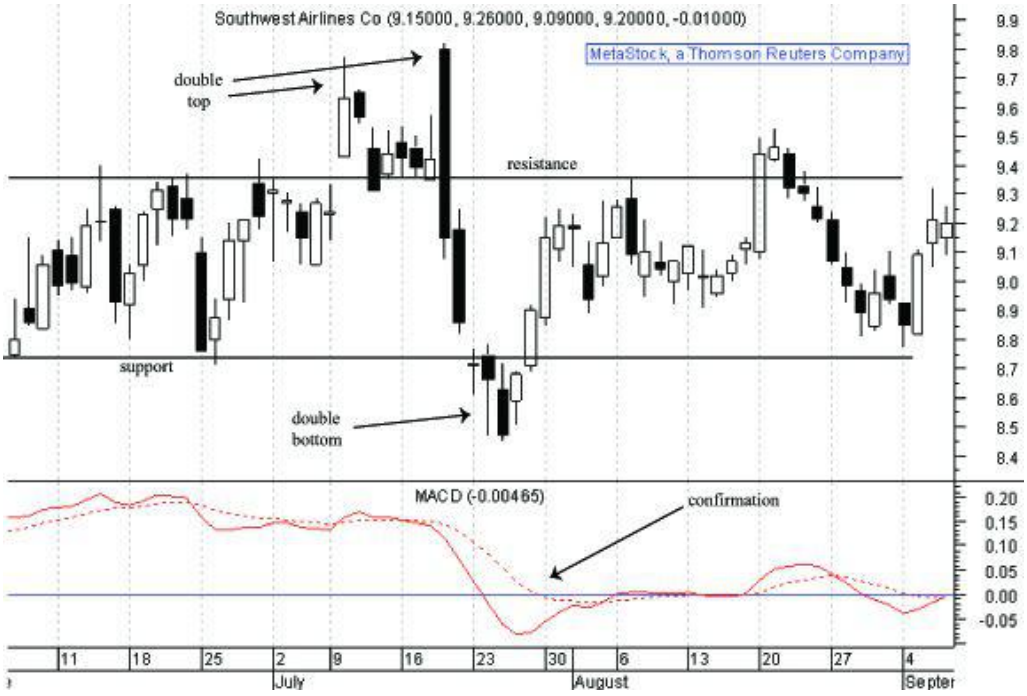
Chartists relying on Western indicators are likely to find many examples of signal and confirmation in these signals alone. Typically, wedges approaching resistance (rising) or support (falling) or double tops and bottoms, accompanied by gapping price movement, provide strong signals and confirmation.

The chart of Apple gave a good example of this. The falling wedge is a bearish pattern and this developed to end with a downward move and a triple bottom. This was a very strong bullish sign and the next step was a strong uptrend.

Another example was found in the case of FedEx. Note the clear lines of resistance and support. The first move was a price decline below support, which quickly returned to the narrow breadth of trading range.
Next, prices trended above resistance and formed a double top. This lacked momentum, however, as prices gapped lower and back into the previous trading range, where they remained for the rest of the period charted.

Western and oscillator confirmation

Western signals may be confirmed as well by tracking momentum oscillators. As the oscillator moves into an overbought or oversold condition, it may further support a strong reversal signal, especially at or near resistance or support.
Oscillators are especially strong when price breaks through resistance or support. If that occurs with gapping price action, an oscillator signal is compelling for immediately reversal. Southwest Airlines experienced price breakouts first above resistance and then in reaction, below support.
By the end of the charted period, prices had returned to the established trading range. Notice the reversal signals in both breakouts: first a double top and then a double bottom. The double bottom was confirmed by a brief dip into bearish territory but an immediate return into the bullish region.



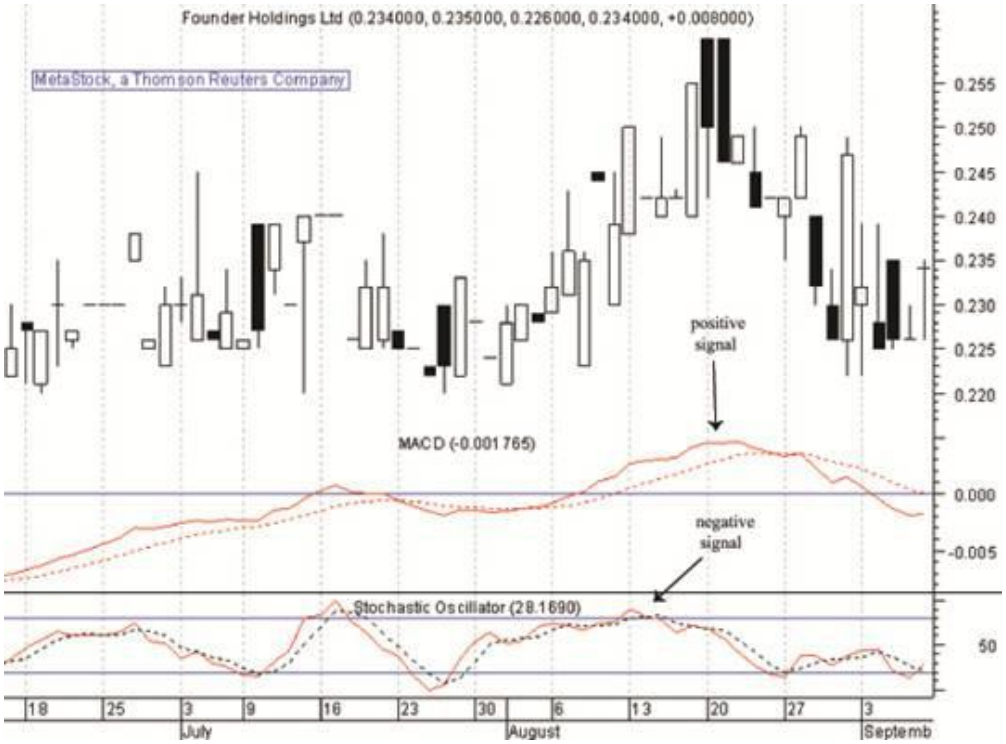
Oscillator and oscillator confirmation

Less common in chart analysis is an oscillator confirmed by another oscillator. Most chartists will tend to prefer one or two oscillators as confirmation of either candlestick or Western signals. However, one situation may depend on whether two oscillators agree or contradict one another.

The chart for Intel Corp. includes an uptrend in between two downtrends. The second downtrend may have led to uncertainty due to the short-term duration of the previous price moves. However, both MACD and Stochastic oscillators confirmed the price direction.

Just as significant is the case in which the initial signal is uncertain and twp oscillators do not agree. This lack of confirmation requires more information before entry or exit decisions are made. For example, the chart of Founder Holdings was highly volatile, so checking two oscillators made sense. If they agreed, then a direction could be expected to hold.

However, MACD appeared positive while Stochastic was negative. This contradiction provided no useful indication of where the price might move next. The price is too volatile and the lack of confirming signals is troubling. Because the oscillators contradicted each other, the prudent decision here would be to take no action.



Semi-signals: Trend or channel lines and moving averages

Two particular Western tools used in technical analysis are not indicators but pattern signals. Both are key for use in confirmation, however. These are trend or channel lines, and moving averages.

Trend lines are very straightforward summaries of the shape and angle of trends. Their value is in how they identify the reversal in price. The chart of Edison International summarized price movement very neatly by identifying the three trends in the charted period.

The first and third were uptrends and the second was a downtrend. In each case, the end of the trend is easily located because price reverses and the trend line is stopped by the opposite movement in the candlestick.

Channel lines provide the same type of information, but with an additional twist. By identifying the consistency in breadth of trading during a dynamic and moving trading range, channel lines are likely to mark a trend's conclusion by way of changes in breadth of trading.

For example, AT&T prices moved sideways in a channel of more than one month's duration, and ended with a clearly identified bullish harami. This also marked the conclusion of the channel and the start of a new uptrend.

Moving averages often consist of the use of two MAs at the same time but with different duration. Chartists look for convergence and divergence (between MAs and in relation to price) to provide initial clues of coming reversals.

A single MA also provides valuable information simply by changing its proximity with the current price. Trinity Ltd. was quite volatile over a three-month period, making it difficult to spot reversal indicators.

However, the MA line showed how crossover helps in this analysis. At the beginning of the period. MA was above price as the downtrend continued. This weakened in the middle as MA merged into the middle of price levels.
The MA move below price was brief but it drew attention to a change in the climate of the price itself. When MA again moved above price at the end of the period, it could have signaled a resumption of the downtrend or at least alerted chartists to proceed with caution.

Conclusion

A wide range of indicators are employed in confirmation. These include any number of combined studies and analysis. Chartists depend on confirmation to reduce the chances of acting on false signals.
Even with the best confirmation, false signals are going to occur. The purpose in confirmation is not to remove the uncertainty, but to improve the chances of well-timed trade decisions.

Segment 4. Confirmation techniques used with trend changes

Technicians employ numerous systems for responding to confirmation. While emphasis is on exit upon finding reversal signals, the opposite is just as important: deciding how to react to confirmation.

If a trend is expected to continue, should you take some of your profits, hold your position or add to it? This section addresses these questions.

Partial exit

A conservative method upon building profits in an open position is to take some profits, while leaving the rest to continue growing.

Technicians may set pre-established price goals for partial exit, so that even with continuation of a trend, a disciplined approach would be to take some profits. This is a dollar-based system. For example, a trader may decide that if a position's value increases by $1,000, the overall position will be reduced by $500 (or closed).

Equally important is to set bail-out points based on dollar values, in order to reduce maximum losses. For example, a trader may also decide that if a position loses $500, it will be closed. If the position will continue to lose value, cutting losses is prudent, and those same dollars may be put to use elsewhere.

The difficulty with a fixed dollar-based Another method is the percentage system exit strategy is its inflexibility. Percentage systems address this problem.

A trader may set two exit points for any position: One if the price grows and another if it declines. For example, if the value of a position grows by 5%, one-tenth of the position will be closed; and if the position declines by 10%, the entire position will be closed. This ensures a level of profits or a limited level of losses.

For example, on the chart of the Tom Group, Ltd., sale points are identified at 10% intervals. This enables the trader to sell 10% at three different 5% increase price points, so some profits are taken as the uptrend continues.

Another example demonstrates how the bail-out rule works. In the case of Aluminum Corp. of China, the buy point was 3.20 and bail-out was set at a drop of 10%, or 2.88. This occurred toward the conclusion of the charted period.

Stop loss and trailing stop orders

The use of specific types of orders, placed when positions are opened, helps to put exit systems in place. A *stop loss* is an order to sell an open long position once a price reaches a per-determined price. This creates a sale to minimize losses.

For example, a stop loss order tells the broker to sell shares if the price declines by 10%. However, the stop loss does not ensure that the target bail-out price will be the sales price.

The stop loss is activated once that price is reached. However, the price may continue to decline before the order is executed. So using a stop loss may generate a bail-out, but actual execution could occur at a lower price.
The chart of Hewlett-Packard specified bail-out at a 10% drop, or 19.35 based on purchase price of 21.50. At that point, a new bail out, 10% of 19.35, was set at 17.41.

In a case of a rapid price decline, the actual loss could be much lower, however. For example, Research in Motion's price dropped with a large gap. The specified sales price had been set, but the sale price was lower.
So although the stop-loss was set at 8.50, this was only the point where a sale order was placed. By the time it was executed, the price had declined to 7.50.

Another type of order is the *trailing stop*. If the stock's price rises, the trailing stop is adjusted to a specified percentage or amount below. For example, the trailing stop is fixed at 10% below each day's high. As long as the stock continues to rise, the trailing stop is adjusted. As soon as it declines to the 10% level, a sale is generated automatically.

The advantage of the trailing stop over the stop loss is that it adjusts to protect profits. It provides for unlimited profits while fixing loss levels. For example, a buyer of shares in Akorn set a 10% decline as the point where 20% of the position was to be sold.

This occurred only once in the charted period. The rest of the trend continued upward throughout the charted period.

Risk reduction – using options to hedge

Even with confirmation of a continuation or reversal signal, you cannot be certain about timing of entry or exit. An open position is at risk if reversal signals are ignored; and closing a position prematurely based on a false reversal is also damaging.

Positions can be hedged with the use of options. These may be employed to manage positions rather than to speculate. Two ways this can be accomplished:

1. Protecting unrealized profits in open positions. In this situation, a trader may have an open long position. A reversal signal appears, but it is inconclusive. In this case, rather than selling shares, the trader purchases one long put for every 100 shares owned.

This creates an "insurance put." If the stock value falls, the put will gain one point in value for each point lost in the stock. It costs money to buy the put, but it is a relatively small premium for the protection it provides.

If the price does decline, the put can be sold at a profit to offset losses in the stock. Or the put can be exercised and shares will be sold at the fixed strike of the put.

For example, Boeing was quite volatile from June through September, 2012. Once at upside gap appeared, a trader might be concerned about possible price retreat.

At that point the trader may buy a put. The example is based on a 75 put, which is at the money, so its value will grow one point for each point lost in

the stock. Once the price fell to 71, the trader sold the put and took a four-point profit, but did not sell any stock.
Another price rally occurred and once again, went above 75 per share. The trader bought another put at this high price and held it until the price fell to 70. Selling the put generated another five points of profit, all without needing to sell shares of stock.

2. Increasing potential in reaction to bullish continuation. An open long position is in the middle of a strong uptrend. A continuation signal has developed. However, in place of buying more shares and increasing the full market risk, a trader buys a call.
The long call will increases one point for each point of growth in the price of the stock. If the stock price declines, both stock and call lose value. However, using the call as a continuation strategy is a relatively inexpensive method for increasing profit potential.
If the stock rises, the call can be sold at a profit to take advantage of the higher price per share. Or the call can be exercised to buy additional shares at the fixed strike.
The chart of Caterpillar went through a volatile period, trending downward before turning to the upside. A bullish continuation signal appeared in the form of a thrusting lines indicator.
The this point, a trader bought an 85 call and held onto it until the price had risen to nearly 90. At this point, the call was sold and profits taken. This was an example of increasing the long position but without taking the risk of buying more stock.

Recognizing continuation signals

With emphasis on likely reversal, traders may easily overlook the importance of continuation. A continuation signal may lead to taking of partial profits, cutting losses, or increasing a position.

Continuation comes in many forms, and should always be confirmed. For example, the chart of Silver Base Group Holdings marked the start of a long downtrend with a large downward price gap.

The meaning of this gap was not known right away. However, the bearish trend was confirmed when MACD lines crossed from bullish down into bearish territory. MACD remained bearish throughout the remainder of the period.

Mid-trend entry

Some traders use continuation and confirmation to increase positions already held. This mid-trend entry strategy can be timed in several ways:

a. Increase positions at recognized likely conclusion of retracement. The tendency is for retracements to be very short-term and of predictable degree. They may also take on specified shapes likes flags or pennants.

For example, the chart of Norfolk Southern exhibited a strong uptrend throughout the period charted. However, increased position size was timed to coincide with the end of two retracements, as marked.

The first retracement was clear because the uptrend resumed. The second example was less clear and it seems that buyer momentum was beginning to stall at this point.

b. Increase positions upon breakout with continuation signals. In this case, a price breaks out of the trading range. Rather than a reversal signal, however, the signs point to continuation. Upon seeing this, a position size is increased to take advantage of the change in the trading range.

The chart of Southern Co. began trading under resistance, but then broke through strongly. Once it was established that a flip had occurred (prior resistance became new support), a new entry point was identified, and the long position size was increased.

c. Increase positions when price in an uptrend falls to the level of the moving average. When MA is below price, as price falls and touches the MA, if the

uptrend is confirmed, this point may be used to increase the size of the open position.

China Foods trended upward from February through to the end of April. The entire time, the moving average was below price. At four points, the price dipped and touched the MA line. These were identified as points to increase position size.

However, once the MA line moved through price and then above, it signaled the possible end of the uptrend. At this point, the seller would be likely to sell the entire position, take profits, and wait for new signals.

The methods employed to increase a position contradict most technical assumptions of fixed position size. The fixed size assumption is useful to demonstrate how trends affect value; however, in practice, increasing the size when a positive trend is underway can increase profits.

This applies in most situations to long positions during uptrends. However, it can also be applied to existing short positions during downtrends. A trader who has shorted stock may sell more stock with a downside continuation, or the holder of short calls may sell additional calls if a bearish continuation signal is confirmed.

Techniques for increasing position size are called *pyramid systems* or *pyramiding*. While the appeal of exploiting trends is compelling, risk should be kept in mind as well.

Increasing position size in reaction to continuation signals (or timed to enter after retracement of convergence with MA) is logical. However, when open positions are increased, a greater risk of loss also occurs.

Dangers of greed and panic

With all trades and strategies, there are two inhibiting emotions within the market: greed and panic.

Greed causes traders to enter positions during strong uptrends, but without analysis of whether the timing is sound. As an uptrend begins to lose momentum, the tendency is for more long position traders to enter positions. This often leads to entry at exactly the wrong time.

Panic causes traders to get out of positions at the wrong time as well. During a strong downtrend, for example, as the price approaches the bottom, a growing number of long position traders sell.

The contrarian approach is a profitable one. The contrarian does not simply act opposite of the timing of the overall market. The contrarian acts for different reasons. Ignoring the tendency to act out of greed or panic, the contrarian uses logic and analysis to time entry and exit.

Requiring signals and confirmation leads to a higher degree of well timed decisions. This often means the timing is made opposite of most traders, which is why the term "contrarian" applies. However, it is caused by the application of confirmation of discovered signals instead of emotional causes for timing of entry or exit.

Understanding the technical ideal – key point to remember

Technical analysis is a science, but it is not precise. The purpose of using these techniques is to improve the percentage of well-timed entry and exit decisions.

Knowing that success can never be 100%, technicians employ specific strategies but also are aware of risks. And so a wise approach is to never risk more in a single trade than you can afford to lose.

The technical skills to keep in mind and to practice include:

1. **Knowledge of the basics**

Learn the differences between fundamental and technical analysis and use both to improve your analytical skills.

Technical indicators may include Western indicators based on price patterns and volume; or Eastern indicators (candlesticks) that include specific price patterns for both reversal and continuation.

2. **Master the power of charting**

Charts develop patterns and display not only trends, but momentum as well. Chart patterns also help coordinate many different signals to recognize how trends evolve.

Technical analysis is most often defined as the study of price. More accurately, though, it is the study of price *patterns*, and these are found on

charts. As price evolves, recognizable patterns are used to signal momentum and directional change.

3. **Rely on the strength of candlesticks.**

Candlestick charts are powerful technical tools. Candlestick formations include dozens of reversal and continuation signals that, when confirmed, vastly improve entry and exit timing.

Dozens of candlestick signals, both reversal and continuation, are found in single-session, double-session, and multiple session types. Some are more reliable than others, and some others may act either as reversal or continuation. However, when confirmed, candlestick indicators are among the best technical tools for timing entry and exit.

4. **Always follow the trend**

Trends follow predicable paths and are recognized through visual technical tools. Use these to better understand the direction, momentum, and change in the trend itself.

The trend involves several attributes worthy of study at the same time: direction, momentum, and retracement are key among these. All trends will contain elements of these attributes, which provides strong clues about likely reversal.

5. **Use moving averages to recognize coming price changes**

Short-term price movement is chaotic, but moving averages help smooth out the longer-term trend. Specific changes in MA also foreshadow coming price reversals.

MA can be employed as an overlay to price. Crossover points between MA and price may accompany changes in direction and this tendency, when confirmed, aids in recognizing how trends develop patterns for continuation or reversal.

6. **Track the interaction of price and volume.**

Crossover and divergence are significant because they predict reversal before price changes. Volume confirms price trends effectively.

Volume indicators or single-session spikes are among the best signals about the nature (strength or weakness) of the trend. Volume signals also are valuable confirming signs that, when used with Western of Eastern indicators, strength what these reveal.

7. **Momentum is the key change in trends**

No trend continues forever. Eventually, the controlling side begin losing momentum, and this shows up in the momentum oscillator, which confirms other reversal signals.

Momentum and other signals take on added significance when they occur at resistance or support. These borders of the trading range are most resistance to continuation of a trend, so weakening momentum is most likely to occur as price approaches these price points.

8. **More than anything else, rely on *confirmation* for all signals**

No signal provides enough by itself to act upon with confidence. Always seek confirmation before you act.

Confirmation comes in many forms, and combinations of indicators add effectively to timing of entry and exit. Confirmation may be of either reversal or continuation. Also seek *contradiction* as a means of challenging an initial signal. When this occurs, it may reveal that the initial signal is false.

Conclusion

All technical analysis is estimation. Technicians may use price to confirm what they have seen in fundamentals, or to time day or swing trades. Many experienced technicians track price movement by the minute or hour rather than by the day.

Regardless of the duration of a session employed in the chart, patterns, momentum and volume all continue to provide reliable signals and confirmation for an evolving trend. Although short-term price movement is highly chaotic, charting and signals bring order to the process of timing trades.

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About the Author

Michael C. Thomsett is a fulltime professional author. educator and speaker. He has written over 70 books on topics of options, trading, investing, real estate and business management. He also teaches five investing and trading courses at the New York Institute of Finance, and operates his own educational trading site, ThomsettOptions.com.

As a frequent guest speaker, Thomsett addresses a variety of audiences on many trading topics. In January and Feberuary, 2013, he is a guest lecturer in a six-week course on trading topics at Vanderbilt University in Nashville. Among his best-selling books are six that have sold over one million copies in total. These are Getting Started in Options, The Mathematics of Investing, and Getting Started in Real Estate Investing (John Wiley & Sons), Builders Guide to Accounting (Craftsman), How to Buy a House, Condo or Co-Op (Consumer Reports Books), and Little Black Book of Business Meetings (Amacom).

Thomsett lives near Nashville, Tennessee and writes for several publishers, notably John Wiley & Sons, Amacom Books, Financial Times/Prentice Hall, and McFarland & Company. He also is an active blogger and contributor of educational articles on L:inkedIn, Twitter, Seeking Alpha and the Chicago Board Options Exchange (CBOE).

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Table of Contents