



WEALTHWATCH
ADVISORS

**Technical Analysis
of The Financial Markets**

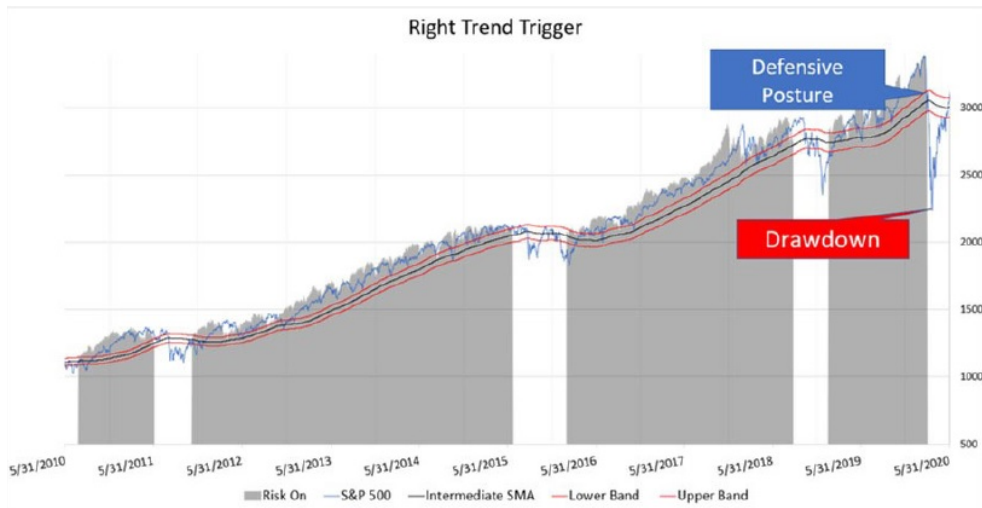
SIMPLE MOVING AVERAGES

Moving averages smooth the price data to form a trend line which indicates the movement on a stock, ETF, Mutual Fund, or Index. Moving Averages or MA is a trend line that graphs the direction of a stock, ETF, or Index. MA are usually used to identify the trend direction of a financial product. MAs can use any period an analyst feel is beneficial to understand the direction of a financial product. The most common are 20-day , 50-day and 200-day averages. The longer the time period, the greater the lag. The shorter the period use to track the trend, the more sensitive it will be to price change. For example, a 200-day moving average will have more lag than a 20-day moving average because it contains prices for the past 200-days. The 50-day and 200-day moving averages are most commonly used and are considered important trading signals. Many of the drawdown protection are investment managers use incorporate moving averages in their algorithms.

Below is an example of a 200-day moving average for the S&P 500 Index. The closing prices are the blue line, and the 200-day moving is the gold line.



Some analysts will place bands above and below a moving average to identify buy or sell signals for an investment model. These bands are typically known as “Bollinger Bands®”. Bollinger Bands were developed by John Bollinger. Bollinger understood that volatility is based on the standard deviation, which changes as volatility increases and decreases. His bands automatically widen when volatility increases and contract when volatility decreases. The graph below shows a moving average trend with band above and below the moving average. The red line is the band above and below the moving average, while the blue line is the moving average.



The graph shows how this signal allow the manager to protect the drawdown within a model. The white shaded areas in the graph are periods when the manager transferred the model's equity

holdings to short or intermediate bonds due the moving average penetration of the lower band. The grey shaded areas indicate that the manager has restored the equity holdings within the model.

Bollinger bands are useful in that their settings can be adjusted to suit the characteristics of particular securities or trading styles.

Some analysts look closely at the 50-day and 200-day moving averages on an investment. When the 50-day moving average crosses from above to below the longer or 200-day moving average this may be an indication that the market is transition from a bull market to a bear market. Below is a chart showing the SPY 50-day and 200-day moving averages, and when the 50-day moving average crossed below its 200-day moving average.



Moving Average Convergence/Divergence (MACD)

MACD is a trading indicator that is often used in conjunction with moving averages. MACD was created by Gerald Appel in the late 1970s. MACD is a trend-following momentum indicator that reveals the relationship between two moving averages of an investment's price. The MACD is



calculated by subtracting the 26-period exponential moving average or EMA from the 12- period EMA. The exponential moving average (EMA) is a technical chart indicator that tracks the price of an investment (like a stock or commodity) over time. The EMA is a type of weighted moving average (WMA) that gives more weighting or importance to recent price data.

The result of calculation above is the MACD line. A nine-day EMA of the MACD called the “signal line”, is then plotted on top of the MACD line, which can function as a trigger for buy and sell signals. Many analysts will buy an investment when the MACD crosses above its signal line and sell the investment when the MACD crosses below the signal line. Below is an example of a MACD graph.



MACD is usually displayed using a histogram. A histogram will graph the distance between the MACD and its signal line. If the MACD is above the signal line, the histogram will be above the MACD’s baseline. If the MACD is below its signal line, the histogram will be below the MACD’s baseline. Analysts use the MACD’s histogram to identify when there is bullish or bearish momentum. The real value of the histogram is spotting when the spread between the two lines is widening or narrowing. When the histogram is over the baseline or its zero line (positive) but starts to fall toward the baseline, the trend is weakening. Conversely, when the histogram is below its baseline, and starts to move upward towards the baseline, the downtrend is losing momentum. Although no actual buys or sell signals are given until the histogram crosses its baseline, the histogram turns provide earlier warnings that the current trend is losing momentum. Turns in the histogram back toward the baseline always precede the actual crossover signals. Histograms turns are best used for spotting early exit signals from existing positions. In summary, when the MACD falls below the signal line, it is a bearish signal and when the MACD is above the signal line the signal is bullish.

RELATIVE STRENGTH (RSI)

Relative Strength is a measure of the price of an investment compared to another investment. It was developed by J. Welles Wilder, Jr. in the 1978. It is calculated by taking the price of one asset



and dividing it by another asset. For example, let assume Investment A is priced at \$10, and Investment B is priced at \$15, the relative strength of Investment A to Investment B is $(10/28) 0.36$. The RSI provides context when it is compared to the previous levels of relative strength. For example, if the relative strength between Investment A to Investment B ranges between 0.5 and 1, historically, the current level of 0.36 indicates the Investment A is undervalued or that Investment B is overvalued, or a combination of both. RSI assigns a value on an investment between 0 and

100. RSI is plotted on a vertical scale of 0 to 100. Movements above 70 are considered to be overbought, while oversold conditions would be a move under 30. Because of shifting that takes place in bull and bear markets, the 80 level usually becomes the overbought level in bull markets, and the 20 level the oversold level in bear markets.



STOCHASTICS

The Stochastics oscillator was popularized by George Lane. This tool is based on the observation that as price increases, closing prices tend to be closer to the upper end of the price range. Conversely, in downtrends, the closing prices tends to be near the lower end of the range. Two lines are used in Stochastics, 1) the %K line and 2) the %D line. The %D line is the more important of the two lines and is the one that produces the major signals. The %K line is usually charted as a solid line, while the %D is a dotted line. Analysts like Stochastics due to the ease in interpreting buy and sell signals.

The premise behind Stochastics is that when an investment's trend is upward, its closing price tends to trade at the high end of the day's range. This is known as Price Action. Price Action is the range of prices at which an investment trades throughout its daily session. An example would be if an investment opened at \$15 traded as low as \$14.75 and as high as \$15.75 and closed the day at 15.50, the price action or range would be between the low of \$14.75 and \$15.75. Conversely, if the price has a downward trend, the closing price usually trades at or near the low range of its trading session.

The intent is to determine where the most recent closing price is in relation to the price range for a chosen time period. Fourteen is the most common period used for this tool. To determine the



K line, which is the most sensitive of the two, the formula is: $\%K = 100 [(C - L_{14}) / (H_{14} - L_{14})]$, where C is the latest close, L₁₄ is the lowest low for the last 14 periods, and H₁₄ is the highest high for the same periods. Fourteen periods can refer to days, weeks, or months.

The formula simply measures, on a percentage basis of 0 to 100, where the closing price is in relation to the total price range for a selected time period. A very high reading of 80 or above would put the closing price near the top of the range, while a low reading usually under 20, would indicate a closing price near the bottom of the range.

The second line or the %D line is a three-period moving average of the %K line. There are two types of stochastics, *fast* and *slow*. The formula above is fast stochastics. By taking another three-period average of %D, a smoother version or slow stochastics is computed. Most analysts use the

slow version as it produces more reliable signals. These two formulas produce two lines that oscillate between a vertical scale from 0 to 100. The K line is the faster line, and the D line is the slower line. The major signal to watch for is a divergence between the D line and the price of the underlying market when the D line is in an overbought or oversold area. As mentioned above, the upper and lower extremes are the 80 and 20 values.

A bearish divergence occurs when the D line is over 80 and forms two declining peaks while prices continue to move higher. A bullish divergence is present when the D line is under 20 and forms two rising bottoms while prices continue to move lower. The actual buy or sell signals trigger when the faster K line crosses the slower D line.



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