
CHAPTER 2.3

Technical Indicators

TECHNICAL ANALYSIS: TECHNICAL INDICATORS

Charts always have a story to tell. However, sometimes those charts may be speaking a language you do not understand and you may need some help from an interpreter. Technical indicators are the interpreters of the stock and CFD markets. They look at price information and translate it into simple easy-to-read signals that can help you determine when to buy and when to sell.

Technical indicators are based on mathematical equations that produce a value that is then plotted on your chart. For example a moving average calculates the average historic price of a stock or CFD and plots a point on your chart. As your stock or CFD chart moves forward the moving average plots new points based on the updated price information it has. Ultimately the moving average gives you a smooth indication of the direction in which the stock or CFD is moving.



Each technical indicator provides unique information. You will find you will naturally gravitate toward specific technical indicators based on your trading personality, but it is important to become familiar with all of the technical indicators at your disposal.

You should also be aware of the one weakness associated with technical indicators. Because technical indicators look at historical price data, they do lag behind current market data to an extent but they still provide invaluable information.

Technical indicators are divided into the following categories:

Contents	Trending Indicators
	Oscillating Indicators
	Volume Indicators

TRENDING INDICATORS

Trending indicators, as their name suggests, identify and follow the trend of a stock or CFD. Stock and CFD traders make most of their money when stocks and CFDs are on a trend. It is therefore crucial for you to be able to determine when a stock or CFD is on a trend and when it is consolidating. If you can enter your trades shortly after a trend begins and exit shortly after the trend ends then you will be quite successful.

Let's take a look at the following indicators of trends:

-	Moving averages
-	Bollinger bands

Moving Averages

Moving averages are the most basic trending indicator. They show you the direction in which a stock or CFD is going and where potential levels of support and resistance may be. Moving averages themselves can serve as both support and resistance.

As we discuss moving averages we will look at the following three topics:

-	How moving averages are constructed
-	Moving average trading signals
-	Strengths of moving averages

How a Moving Average is Constructed

Moving averages are constructed by finding the average closing price of a stock or CFD at any given time and then plotting these points on a price chart. The result gives you a smooth line that follows the price movement of the stock or CFD.

You can adjust the volatility of a moving average by adjusting the time-frame which the indicator looks at to obtain an average price. Moving averages that look at fewer time-frames to determine an average are more volatile. Moving averages that look at more time-frames to determine an average are less volatile.



Moving Average Trading Signal

Moving averages provide useful trading signals for stocks or CFDs that are on a trend.

Entry signal—when an upward-trending stock or CFD bounces back up after hitting an upward-trending- moving average, or when a downward-trending- stock or CFD bounces back down after hitting a downward-trending- moving average.

Exit signal—when you invest on an upward-trending- stock or CFD set a stop-loss below the moving average. As the moving average rises, move your stop-loss up along with the moving average. If the stock or CFD ever breaks far enough below the moving average, your stop-loss will take you out of your investment.

When you enter a trade on a downward-trending- stock or CFD, set a stop-loss above the moving average. As the moving average falls, move your stop-loss down along with the moving average. If the stock or CFD ever breaks far enough above the moving average, your stop-loss will take you out of your trade.

Strengths of a Moving Average

Moving averages enjoy the following strengths:

- They identify simple trends.
- They are flexible enough to work in both short-term and long-term time-frames.

Weaknesses of a Moving Average

Moving averages have the following weaknesses:

- They lag behind the market because the data used to calculate a moving average is historic, which doesn't necessarily reflect what will happen in the future.
- They cannot identify trends, or levels of support or resistance, during channeling markets.

Bollinger Bands

Developed by John Bollinger, Bollinger Bands is an indicator that allows users to compare volatility and relative price levels over a period of time. In short, the Bollinger Bands provide a relative definition of high and low.

Bollinger bands consist of two bands - an upper band and a lower band - and a moving average, and are generally plotted on top of the price movement of a chart.

As we discuss Bollinger bands we will look at the following three topics:

- How Bollinger bands are constructed.
- Bollinger band trading signal.
- Strengths of Bollinger bands.

How Bollinger Bands are Constructed

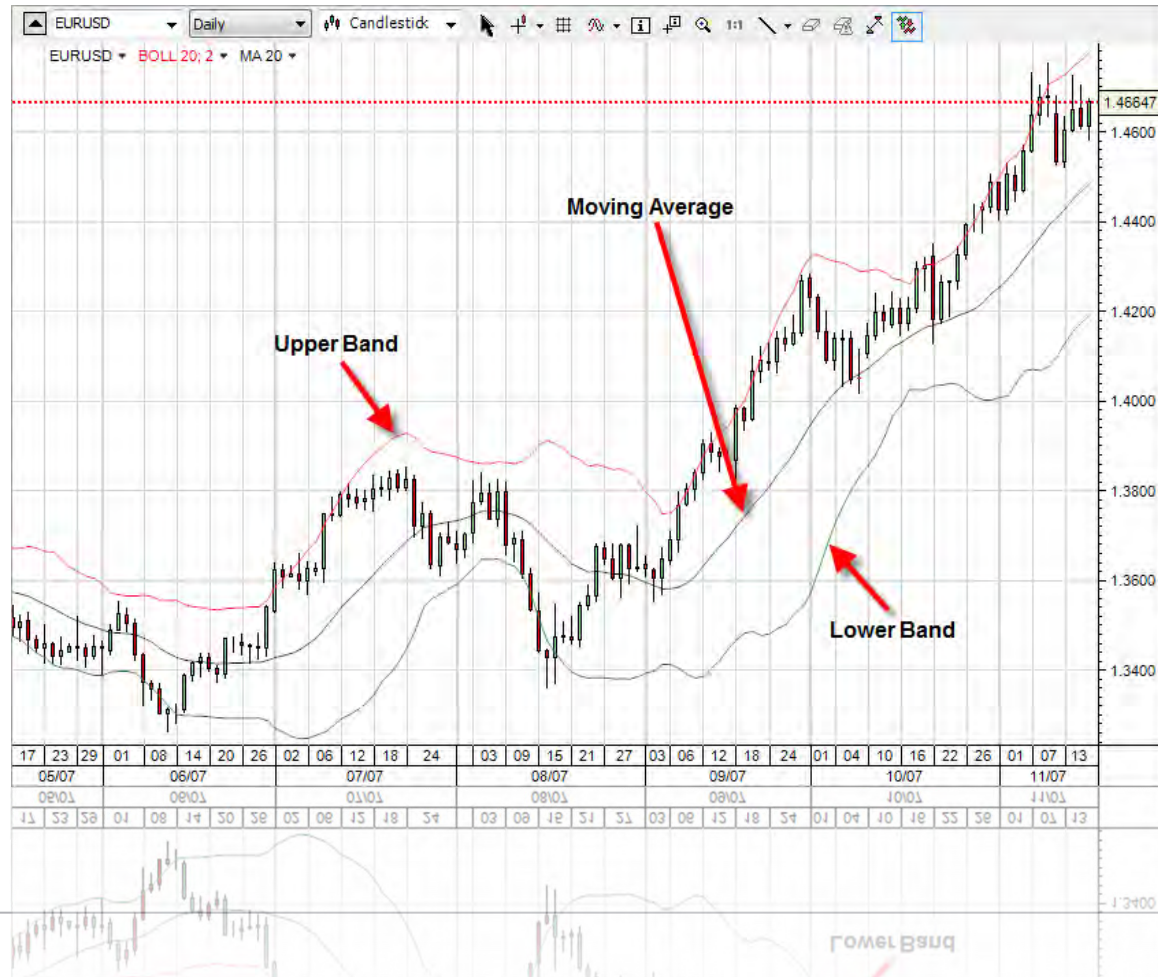
Bollinger bands are typically based on a 20-period moving average. This moving average runs through the middle of the two bands.

A standard deviation is a statistical term that measures how far various closing prices diverge from the average closing price.

The upper band is plotted two standard deviations above the 20-period moving average. The lower band is plotted two standard deviations below the 20-period moving average.

Therefore 20-period Bollinger bands tell you how wide or volatile the range of closing prices has been during the past 20 periods. The more

volatile the stock or CFD, the wider the bands will be. The less volatile the stock or CFD, the narrower the bands will be.



Bollinger Band Trading Signal

Bollinger bands provide useful breakout signals for stocks or CFDs that have been consolidating.

Entry signal—when the bands widen and begin moving in opposite directions after a period of consolidation (see Point A on the chart below), you can invest in the direction the price was moving when the bands began to widen.

Exit signal—at some point after the breakout occurs the bands will begin to move back toward each other (see Point B on the chart below). When this happens, set a trailing stop-loss to sell if the trend reverses (see Point C on the chart below).



Strengths of Bollinger Bands

Bollinger bands enjoy the following strengths:

- They help you identify the trend.
- They identify current market volatility.

Weaknesses of Bollinger Bands

Bollinger bands have the following weaknesses:

- They lag behind the market because the data used to calculate Bollinger bands is historic, which doesn't necessarily reflect what will happen in the future.
- The bands do not, as is commonly believed, serve as support (i.e. the lower band) and resistance (i.e. the upper band) levels.

OSCILLATING INDICATORS

Oscillating indicators, as their name suggests, are indicators that move back and forth as stocks and CFDs rise and fall. Oscillating indicators can help you determine how strong the current trend of a stock or CFD is, as well as when that trend is in danger of losing momentum and turning around.

When an oscillating indicator moves too high, the stock or CFD is considered to be overbought (i.e. too many people have bought the stock or CFD and there are not enough buyers left in the market to push the stock or CFD higher). This indicates the stock or CFD is at risk of losing momentum and turning around to move lower or sideways.

When an oscillating indicator moves too low, the stock or CFD is considered to be oversold (i.e. too many people have sold the stock or CFD and there are not enough sellers left in the market to push the stock or CFD lower). This indicates the stock or CFD is at risk of losing momentum and turning around to move higher or sideways.

We will now take a look at the following oscillating indicators:

- Commodity channel index (CCI).
- Moving average convergence divergence (MACD).
- Slow stochastic.
- Relative strength index (RSI).

Commodity Channel Index (CCI)

The commodity channel index (CCI) is an oscillating indicator developed by Donald Lambert that can show you how bullish or bearish traders are toward a stock or CFD and evaluate the strength of those sentiments. You can see the volatility of a stock or CFD with the CCI, much like you can with Bollinger bands.

The CCI is usually plotted below the price movement on a chart.

As we discuss the CCI we will look at the following three topics:

- How the CCI is constructed.
- CCI trading signal.
- Strengths of the CCI.

How the Commodity Channel Index (CCI) is Constructed

The commodity channel index (CCI) is based on both the average value of past price movements and how far those price movements have strayed from the average, telling traders in effect how volatile the price movements have been.

If the average price of the stock or CFD is moving higher then the CCI will also be moving higher. Just how quickly the CCI moves higher depends on the volatility of the stock or CFD. If it is more volatile, the CCI will move higher faster. If it is less volatile, the CCI will move higher slower.

If the average price of the stock or CFD is moving lower, the CCI will also be moving lower. Just how quickly the CCI moves lower depends on the volatility of the stock or CFD. If it is more volatile the CCI will move lower faster. If it is less volatile the CCI will move lower slower.

The CCI moves back and forth, crossing 100, zero and -100 as it cycles through its progression.



Commodity Channel Index (CCI) Trading Signal

The commodity channel index (CCI) produces trading signals as it fluctuates to cross above and below both 100 and -100.

Entry signal—when the CCI initially rises above 100 and then falls below it, you can sell the stock or CFD knowing that buyers have exhausted their momentum and the stock or CFD is likely to decline soon.

When the CCI falls below -100 and then rises above it, you can buy the stock or CFD knowing that sellers have exhausted their momentum and the stock or CFD is likely to rise soon.

Exit signal—when the CCI turns around and starts moving higher after you have sold a stock or CFD, place your stop-loss just above the nearest level of resistance. If the stock or CFD turns around and moves above resistance, your stop-loss will sell your investment.

When the CCI turns around and starts moving lower after you have bought a stock or CFD, place your stop-loss just below the nearest level of support. If the stock or CFD turns around and moves below support, your stop-loss will sell your investment.

Strengths of the Commodity Channel Index (CCI)

The commodity channel index (CCI) enjoys the following strengths:

- It helps you identify volatility in a stock or CFD.
- It helps you identify potential reversal points for a stock or CFD.
- It helps you confirm the strength of current trends.

Weaknesses of the Commodity Channel Index (CCI)

The commodity channel index (CCI) has the following weaknesses:

- It lags behind the market because the data used to calculate the CCI is historic, which doesn't necessarily reflect what will happen in the future.
- It cannot guarantee reversal points for a stock or CFD.

Moving Average Convergence/Divergence (MACD)

The moving average convergence/divergence (MACD) is an oscillating indicator developed by Gerald Appel that can show you when trading momentum changes from being bullish to bearish and vice versa. The MACD can also show you when traders are becoming over-extended, which usually results in a trend reversal for the stock or CFD.

The MACD is usually plotted below the price movement on a chart.

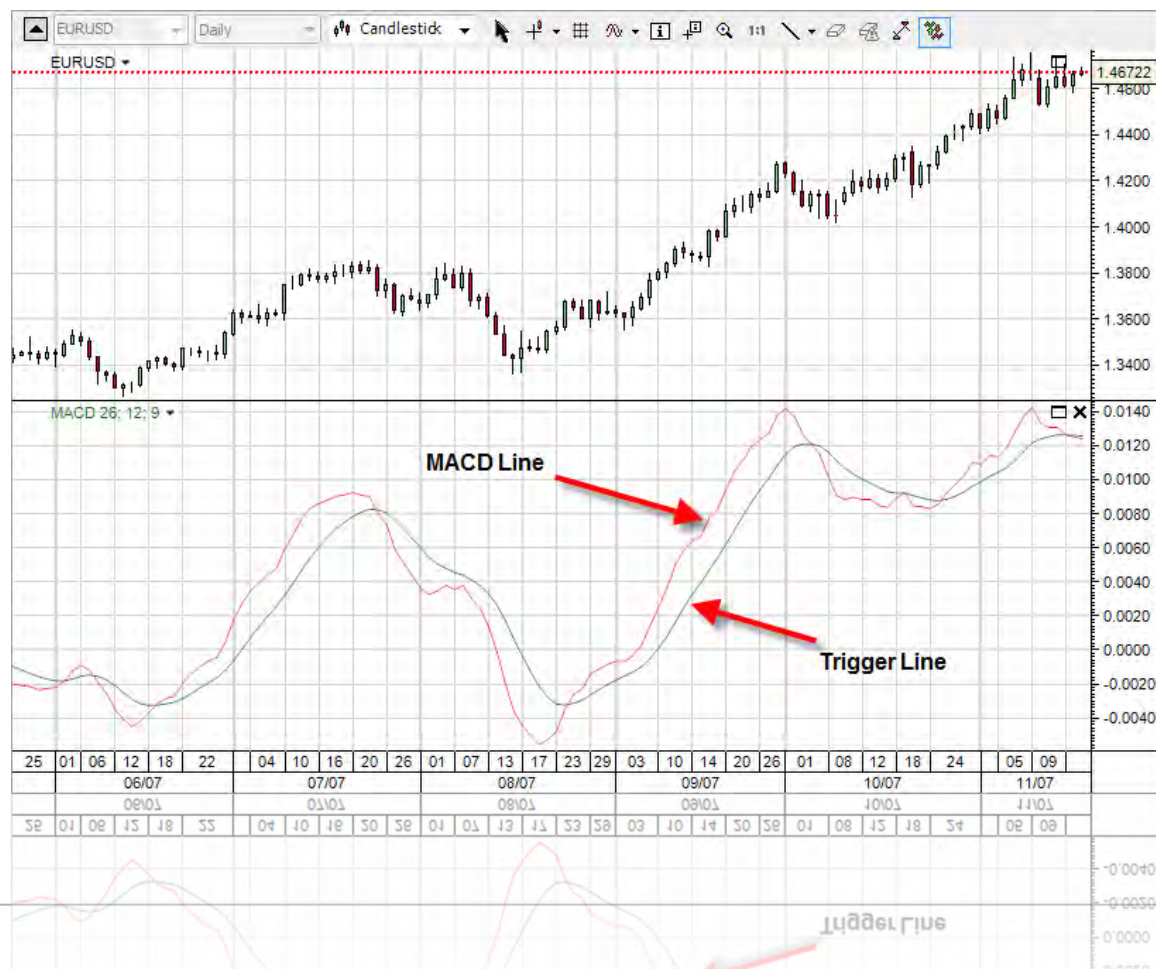
As we discuss the MACD, we will look at the following three topics:

- How the MACD is constructed.
- MACD trading signals.
- Strengths of the MACD.

How the Moving Average Convergence/Divergence (MACD) is Constructed

The moving average convergence/divergence is based on a series of moving averages and how they relate to one another. The standard MACD looks at the relationship between a stock or CFD 12-period and 26-period exponential moving averages. The MACD looks specifically at the distance between these two moving averages. If the 12-period moving average is above the 26-period moving average then the MACD line will be positive. If the 12-period moving average is below the 26-period moving average then the MACD line will be negative.

The MACD line is accompanied by a trigger-line. This line is a 9-period exponential moving average of the MACD line.



You can also plot the MACD as a histogram below the chart. When the histogram is above the 9-period signal line (illustrated by a horizontal line on the histogram) it is signaling that the 12-period moving average is above the 26-period moving average (see Point A). When the histogram is below the 9-period signal line it is signaling that the 12-period moving average is below the 26-period moving average (see Point B).



Moving Average Convergence/Divergence (MACD) Trading Signal

The moving average convergence/divergence (MACD) produces trading signals as it crosses above and below the trigger line.

Entry signal—when the MACD crosses above the trigger line you can buy the stock or CFD knowing that momentum has shifted from being bearish to being bullish.

When the MACD crosses below the trigger line you can sell the stock or CFD knowing that momentum has shifted from being bullish to being bearish.

Exit signal—when the MACD crosses back below the trigger line when you have bought the stock or CFD you can sell the stock or CFD back knowing that momentum has shifted back from being bullish to being bearish.

When the MACD crosses back above the trigger line when you have sold the stock or CFD you can buy the stock or CFD back knowing that momentum has shifted back from being bearish to being bullish.

Strengths of the Moving Average Convergence/Divergence (MACD)

The moving average convergence/divergence (MACD) enjoys the following strengths:

- It helps you identify when the momentum of a stock or CFD changes.
- It helps you confirm the strength of current trends.

Weaknesses of the Moving Average Convergence/Divergence (MACD)

The moving average convergence/divergence (MACD) has the following weaknesses:

- It lags behind the market because the data used to calculate the CCI is historic, which doesn't necessarily reflect what will happen in the future.
- It can provide false signals.

Slow Stochastic

The slow stochastic is an oscillating indicator developed by George Lane that can show you when investor sentiment changes from being bullish to bearish and vice versa. The slow stochastic can also show you when traders are becoming over-extended, which usually results in a trend reversal for the stock or CFD.

The slow stochastic is usually plotted below the price movement on a chart.

As we discuss the slow stochastic, we will look at the following three topics:

- How the slow stochastic is constructed.
- Slow stochastic trading signals.
- Strengths of the slow stochastic.

How the Slow Stochastic is Constructed

The slow stochastic consists of two lines - %K and %D - that oscillate in a range between 0 and 100.

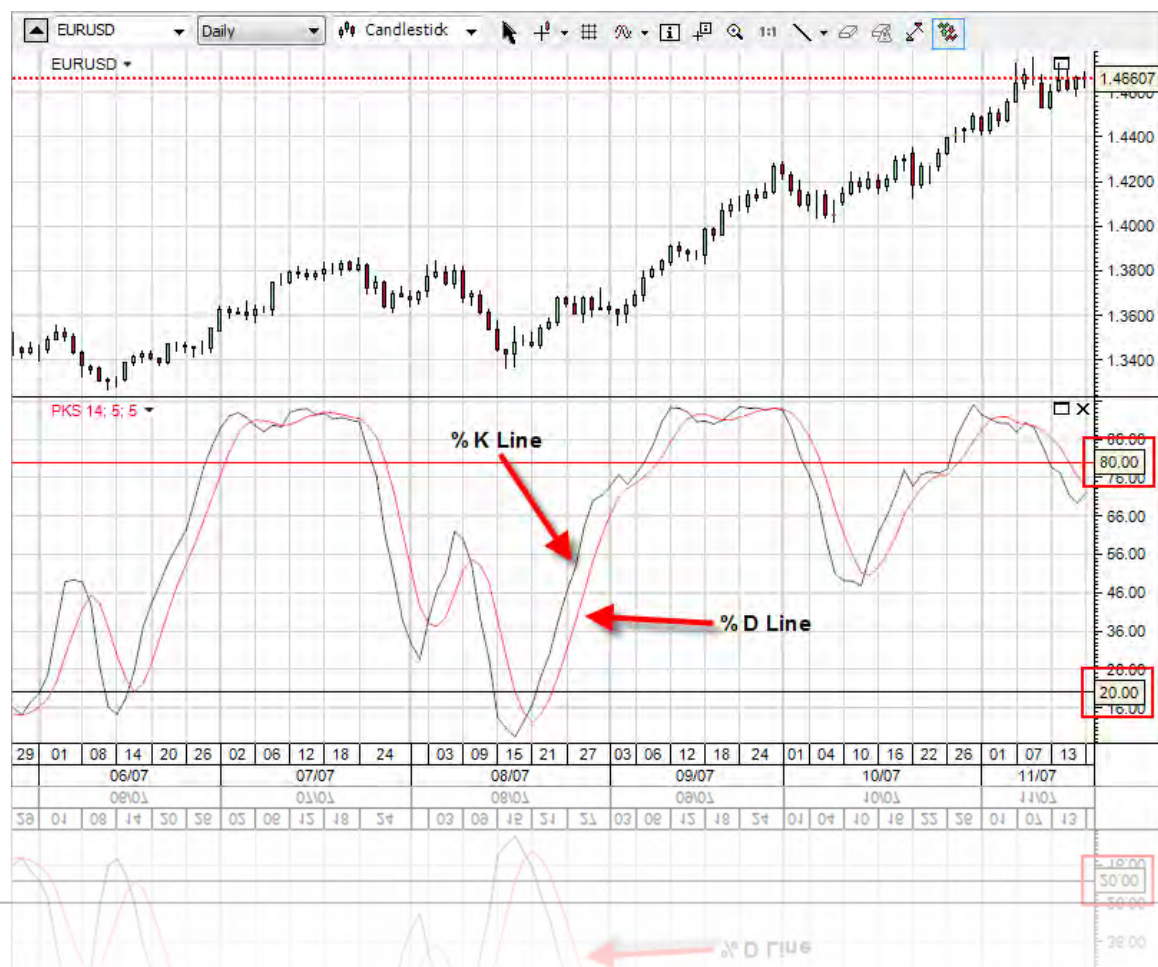
%K is based on where the current closing price of a stock or CFD is in relation to the range of historic closing prices for that same stock or CFD.

%D is a moving average of %K.

If the closing price of the stock or CFD is near the top of the range of historic closing prices, the %K line (followed by the %D line) will move higher.

If the closing price of the stock or CFD is near the bottom of the range of historic closing prices, the %K line (followed by the %D line) will move lower.

For example, if the EUR/USD has closed in between 1.4200 and 1.4300 on each of the past 14 trading periods and it closes at 1.4295 (near the high of the range), then %K will move toward the top of the indicator's range.



Slow Stochastic Trading Signal

The slow stochastic produces trading signals as it crosses in and out of its upper and lower reversal zones.

The upper reversal zone is the area of the indicator that is above 80. When %K is above 80, it shows the stock or CFD may be overbought and may be reversing trend shortly.

The lower reversal zone is the area of the indicator that is below 20. When %K is below 20, it shows the stock or CFD may be oversold and may be reversing trend shortly.

Entry signal—when %K crosses from above 80 to below 80 you can sell the stock or CFD knowing that investor sentiment toward the stock or CFD has shifted from being bullish to being bearish.

When %K crosses from below 20 to above 20 you can buy the stock or CFD knowing that investor sentiment toward the stock or CFD has shifted from being bearish to being bullish.

Exit signal—when %K reverses direction after having crossed either above 20 or below 80, and then crosses over %D, you can exit your trade knowing that investor sentiment is changing direction again.

Strengths of the Slow Stochastic

The slow stochastic enjoys the following strengths:

- It helps you identify when investor sentiment toward a stock or CFD changes.
- It helps you confirm the strength of current trends.

Weaknesses of the Slow Stochastic

The slow stochastic has the following weaknesses:

- It lags behind the market because the data used to calculate the CCI is historic, which doesn't necessarily reflect what will happen in the future.
- It can provide false signals.

VOLUME INDICATORS

Volume indicators provide incredible diversification to your technical indicator portfolio because, instead of relying solely on the price movement of a stock or CFD in their calculations, they take a completely different piece of information into the equation: volume.

Price movement can tell you in which direction a stock or CFD is moving, but volume can tell you what kind of support is behind that price movement. For instance, if you see a stock or CFD moving higher on high volume, you know that there are a lot of investors who believe the stock or CFD should be moving higher. Seeing this support for the price movement should be encouraging to you and should give you the increased confidence you need to buy the stock or CFD yourself. On the other hand, if you see a stock or CFD moving higher on low volume you will know that there are only a few investors who believe the stock or CFD should be moving higher. Seeing this lack of support for the price movement should be discouraging to you and should make you stop and think twice before buying the stock or CFD yourself.

We should take a look at the following two volume indicators:

- On balance volume.
- Accumulation/Distribution.

On Balance Volume

On balance volume is a volume indicator developed by Joe Granville that shows positive and negative volume flow. On balance volume can also show you when the stock price movement is not supported by increasing volume, which usually results in a trend reversal for the stock or CFD.

On balance volume is usually plotted below the price movement on a chart.

As we discuss on balance volume, we will look at the following four topics:

- How on balance volume is constructed.
- On balance volume confirmations.
- Strengths of on balance volume.
- Weaknesses of on balance volume.

How On Balance Volume is Constructed

On balance volume is created by adding or subtracting (depending on whether the stock price moved higher or lower, respectively) today's

volume from the previous trading day's on-balance-volume level and then plotting this point below the price chart. For example if the stock price closes higher today than it closed yesterday then you would add today's volume amount to yesterday's on-balance-volume level. Conversely, if the stock price closes lower today than it closed yesterday then you would subtract today's volume amount from yesterday's on-balance-volume level. Connecting each on-balance-volume data point gives you a smooth line that illustrates how volume has, or has not, been supporting the price movement of the stock.



On Balance Volume Confirmations

Traders are always eager to know whether a trend, or a reversal, has the momentum to continue moving in the same direction. On balance volume can help you determine if there is enough momentum behind a price movement to continue pushing it along.

Positive confirmation—on balance volume can provide positive confirmations of both upward trends and downward trends. If the on-balance-volume line is on an upward trend while the stock price is also on an upward trend, you know there is strong buying support underpinning the upward trend. If the on-balance-volume line is on a downward trend while the stock price is also on a downward trend, you know there is strong selling support underpinning the downward trend.

Negative confirmation—on balance volume can provide negative confirmations of both upward trends and downward trends. If the on-balance-volume line is on a downward trend while the stock price is on an upward trend, you know there is weak buying support underpinning the upward trend. If the on-balance-volume line is on an upward trend while the stock price is on a downward trend, you know there is weak selling support underpinning the downward trend.

Strengths of On Balance Volume

On balance volume enjoys the following strengths:

- It does not rely on price alone in its calculation.
- It helps you confirm the strength of current trends.

Weaknesses of On Balance Volume

On balance volume has the following weaknesses:

- It lags behind the market because the data used to calculate on balance volume is historic, which doesn't necessarily reflect what will happen in the future.
- It can give false confirmations of some trends.

Accumulation/Distribution

The accumulation/distribution line is a volume indicator developed by Marc Chaikin that shows the cumulative flow of money both into and out of a stock. The accumulation/distribution line can also show you when the stock price movement is not supported by increasing volume, which usually results in a trend reversal for the stock or CFD.

The accumulation/distribution line is usually plotted below the price movement on a chart.

As we discuss the accumulation/distribution line, we will look at the following four topics:

- How the accumulation/distribution line is constructed.
- Accumulation/Distribution line confirmations.
- Strengths of the accumulation/distribution line.
- Weaknesses of the accumulation/distribution line.

How the Accumulation/Distribution Line is Constructed

The accumulation/distribution line is similar to the on-balance-volume line, but its calculation has one distinct difference: it does not look at the current trading period's price movement in relation to the previous period's price movement. Whereas the on-balance volume line is calculated based on where the stock price closed in the current period compared to where it closed in the previous period, the accumulation/distribution line is constructed by determining where the stock price closed in relation to the midpoint of that period's price movement.

If the stock price closes above the midpoint you add a value between 0 and 1 to the cumulative value of the accumulation/distribution line. If the stock price closes below the midpoint you subtract a value between 0 and -1 from the cumulative value of the accumulation/distribution line.

For example if the stock price closed at the high of that trading period you would add 1 to the cumulative value of the accumulation/distribution line. Conversely if the stock price closed at the low of that trading period you would subtract 1 from the cumulative value of the accumulation/distribution line.

Connecting each accumulation/distribution data point gives you a smooth line that illustrates how volume has, or has not, been supporting the price movement of the stock.



Accumulation/Distribution Line Confirmations

Traders are always eager to know whether a trend or a reversal, has the momentum to continue moving in the same direction. The accumulation/distribution line can help you to determine if there is enough momentum behind a price movement to continue pushing it along.

Positive confirmation—the accumulation/distribution line can provide positive confirmations of both upward trends and downward trends. If the accumulation/distribution line is on an upward trend while the stock price is also on an upward trend, you know there is strong buying support underpinning the upward trend. If the accumulation/distribution line is on a downward trend while the stock price is also on a downward trend, you know there is strong selling support underpinning the downward trend.

Negative confirmation—the accumulation/distribution line can provide negative confirmations of both upward trends and downward trends. If the accumulation/distribution line is on a downward trend while the stock price is on an upward trend, you know there is weak buying support underpinning the upward trend. If the accumulation/distribution line is on an upward trend while the stock price is on a downward trend, you know there is weak selling support underpinning the downward trend.

Strengths of the Accumulation/Distribution Line

The accumulation/distribution line volume enjoys the following strengths:

- It does not rely on price alone in its calculation.
- It helps you confirm the strength of current trends.

Weaknesses of the Accumulation/Distribution Line

The accumulation/distribution line has the following weaknesses:

- It lags behind the market because the data used to calculate the accumulation/distribution line is historic, which doesn't necessarily reflect what will happen in the future.
- It can give false confirmations of some trends.

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