

The moving average convergence/divergence (MACD) is a popular indicator used by many traders and analysts. Most charting software contains Gerald Appel's MACD indicator.

The standard indicator is composed of two lines. The MACD line is the difference between two exponential moving averages, typically the 12-period and 26-period exponential moving averages. The signal line or the trigger is an exponentially smoothed moving average, usually the 9-period exponential moving average of the MACD line and is often displayed as a dotted line.

Signals often lag when used on weekly data and can cause late position entries and exits.

On shorter length moving averages, there are more signals based on price turns, while we like to use the MACD to indicate a trend change.

In this article, I am looking for signals to confirm and anticipate trend changes.

To make things more easily visible, I will look at the MACD histogram.

A histogram is a chart style that reflects changes in the indicator as individual vertical lines above and below the zero line.

For this study, the MACD line is the difference between the 10

and 20-day exponential smoothed moving averages of price and the MACD histogram is the difference between the MACD line and its 10-day exponential moving average.

It is often easier to see changes develop when using a histogram rather than the usual solid line style. The MACD histogram is more than just a visual change in line style because it actually measures the difference or space between the MACD line and the trigger line.

While the MACD line is lagging, the MACD oscillator is a leading indicator.

When the histogram crosses the zero line, it is an indication of a change in the trend. The MACD oscillator gives the actual buy/sell signal, a leading indicator.

Interpreting the MACD momentum oscillator depends on whether daily or weekly is used. When trading with weekly charts, the most important consideration is the whether the indicator is rising or falling.

The second consideration is to look for the crossover above or below the zero line, signaling a possible upcoming buy or sell signal.

The third and final consideration is whether the indicator is deeply oversold or overbought in relation with the MACD histogram.







On this chart, the MACD histogram is in the middle of the chart while the MACD momentum oscillator is at the bottom of the chart.

Both indicators move above and below their own zero line.

The MACD momentum oscillator is a leading indicator and often gives a signal first before the lagging MACD histograms follows.

This strongly depends on which timeframe is used.

As the chart shows, on daily data the MACD histogram is slightly faster. The official signal occurs when indicators cross in the same direction.

In this chart, we are looking at the popular Exchange Traded Fund QQQQ with daily bars and using the same strategy.

At the end of August, the MACD histogram in the middle chart, crossed the zero line while the confirmation came late from the MACD momentum oscillator on the 1st of September and both indicators remain above the zero line until the end of October. After that period, both lines are clearly heading south.

This weekly chart shows the exchange-traded fund, USO, which represents the price of crude oil. As previously mentioned, leading and lagging characteristics of the indicator depends on the timeframe that is used.

In this example, the MACD momentum oscillator is shown above the zero line at the bottom of the chart for the whole year, while the MACD histogram is lagging and turned above its zero line halfway through February.

Even more importantly, both lines stay above their zero line since February! Look at the MACD momentum indicator strength in October.

The MACD momentum seems to produce more reliable signals when used with weekly data rather than with daily data.

It also should be used in combination with other indicators like the regular MACD and Bollinger Bands.

Conclusion

The MACD momentum oscillator generally serves as a leading indicator, while the histogram of the MACD acts to confirm the change in momentum. However, this is depends on whether the data is daily or weekly.

Both indicators must be moving in the same direction crossing the zero line to have a valid signal.

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