



By [Market Traders Institute](#)

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The **Center of Gravity (COG) indicator** is a technical indicator developed by John Ehlers in 2002, used to identify potential turning points in the price as early as possible. In fact, the creator John Ehlers claims zero lag to the price, and the smoothing effect of the indicator helps to spot turning points clearly and without distractions.

Being a leading indicator, the Center of Gravity is used to anticipate future price movements and to trade on **price reversals as soon as they happen**. However, just like other oscillators, the COG indicator returns the best results in range-bound markets and should be avoided when the price is trending. Compared to the **RSI** or Stochastics, the Center of Gravity indicator has no overbought and oversold levels.

Calculation of the COG Indicator

The COG consists of two lines and is based on the sum of prices over a specified period. A simple moving average of the COG is plotted along the indicator to act as a signal line which generates buy and sell signals.

The formula used to calculate the COG indicator is shown below:

$$\text{COG} = \frac{\text{SUM of closing prices } P_n \times (n+1)}{\text{Sum of closing prices } P_n}$$

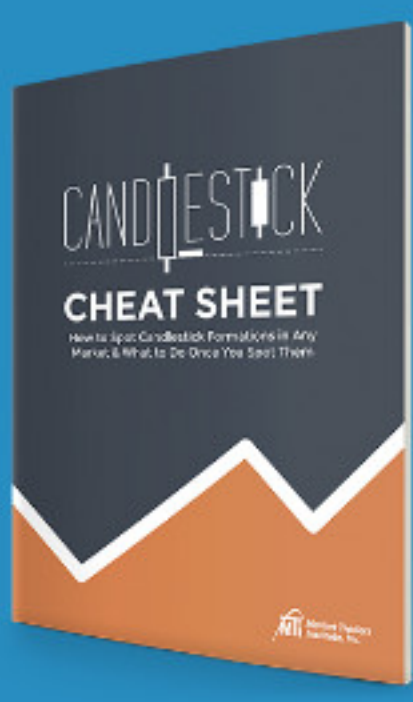
The standard settings of the indicator are the last 10 periods' closing prices and a 3-period simple moving average of the COG, however you can adjust these settings to fine-tune the trading signals that the indicator returns.

Keep in mind that there are many versions of the COG indicator which differ by how they plot the indicator on the chart, but the basic principles of the indicator's calculation apply to all of them.

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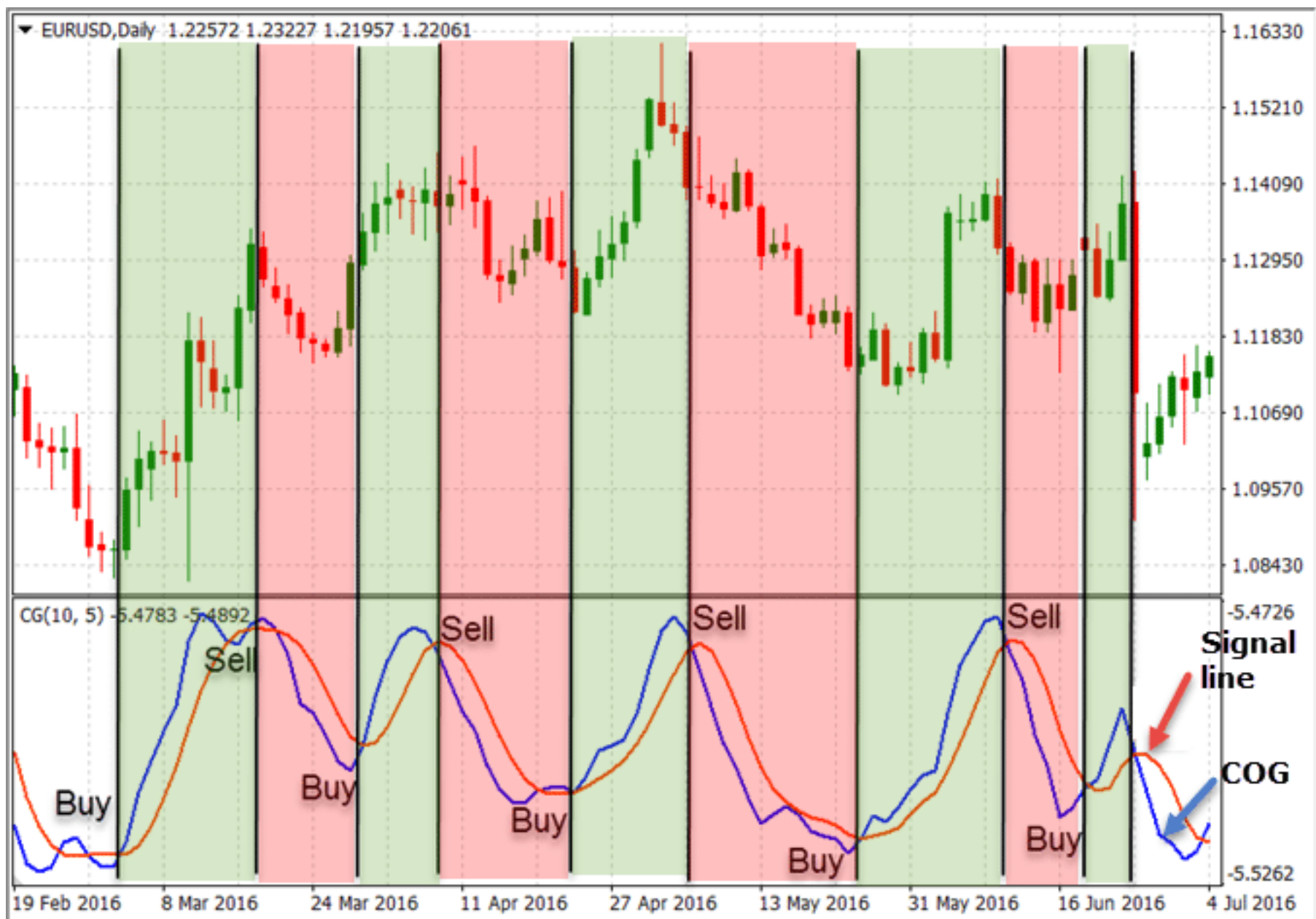
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How to Interpret the Center of Gravity Indicator

The Center of Gravity indicator is based on a simple calculation that takes into account the closing prices of the last n periods, and generates straight-forward trading signals based on a crossover strategy. The 3-period simple moving average is used as a signal line to enter with a buy or sell order.

A buy signal is triggered when the COG line crosses above the signal line, while a sell signal is triggered when the COG line crosses below the signal line. This is shown on the following chart.



You can immediately notice the absence of lag between the price and the indicator. This is a huge advantage of the COG indicator, which helps spot turning points in the price as early as possible.

However, remember to use the COG indicator only in ranging market, which can be identified with the **Average Directional Movement Index (ADX)**.

An ADX reading above 25 indicates a trend, while readings below 25 indicate a range-bound market suitable to trade with the COG indicator. You can simply add both indicators to your chart, and wait for both conditions to align ($\text{ADX} < 25$ and COG crossover) before placing a trade.

This ensures that you don't place trades based on the COG crossover during trending market conditions and helps to avoid many of the false signals.

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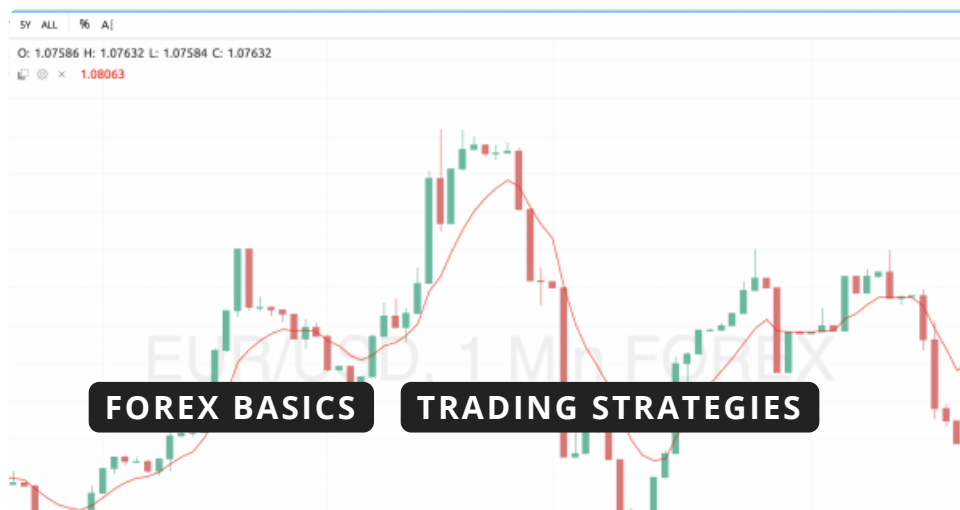
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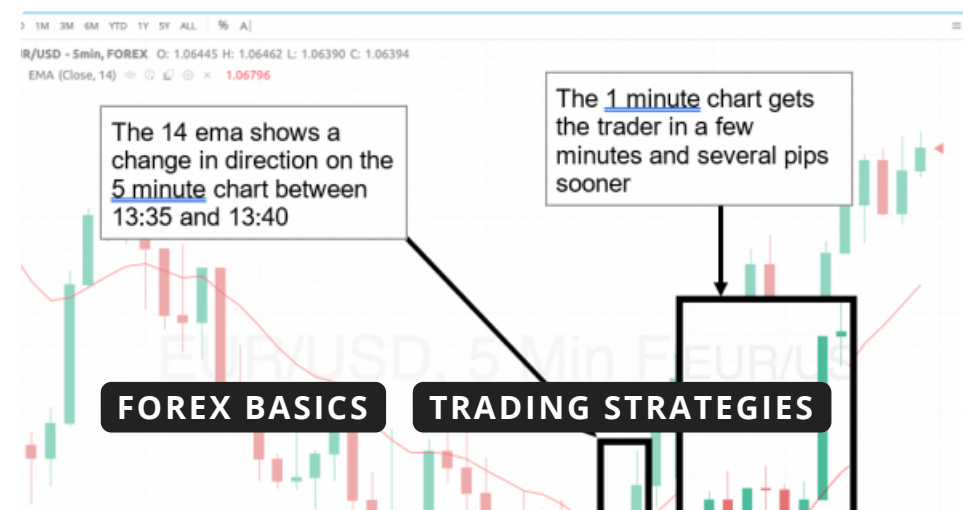
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Registration No.:3830061
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3900 Millenia Blvd.
Suite 200
Orlando, FL. 32839
United States
1-407-740-0900



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