Klinger Oscillator (KVO)

Reference from Investopedia

Description: The Klinger oscillator was developed to determine the long-term trend of money flow while remaining sensitive enough to detect short-term fluctuations. The indicator compares the volume flowing through securities with the security's price movements and then converts the result into an oscillator. The Klinger oscillator shows the difference between two moving averages which are based on more than price. Traders watch for divergence on the indicator to signal potential price reversals. Like other oscillators, a signal line can be added to provide additional trade signals. Traders will use tools such as trendlines, moving averages, and other indicators to confirm trade signals. In addition, traders may use the oscillator in conjunction with chart patterns, such as price channels or triangles, as a way to confirm a breakout or breakdown. Crossovers occur frequently, as do divergences, so the indicator is best used in conjunction with these other technical trading methods.

Usage: The Klinger Oscillator is fairly complex to calculate, but it's based on the idea of *force volume*, which accounts for volume, trend (positive or negative), and *temp* (based on multiple inputs and if/then statements). Using this data, the oscillator is created by looking at the difference between two exponential moving averages of force volume involving different time frames (typically 34 and 55). The idea is to show how the volume flowing through the securities is impacting its long-term and short-term price direction. A signal line (13-period moving average) is used to trigger buy or sell signals. This technique is very similar to signals that are created with other indicators such as the moving average convergence divergence (MACD). While these are the basic signals generated by these indicators, it's important to note that these techniques may generate a lot of trading signals that may not be as effective in sideways markets. When an asset is in an overall uptrend—such as when it is above its 100-period moving average and the Klinger is above zero or moving above zero—traders could buy when the Klinger oscillator moves above the signal line from below. Klinger noted that when a stock was in an uptrend, and then dropped to unusually low levels below zero, and then moved above its signal line, this was a favorable long position to take. When an asset is in an overall downtrend, traders could sell or short-sell when the Klinger oscillator moves below the signal line from above. Klinger noted this was especially noteworthy when the indicator had seen an uncharacteristic spike above zero. The zero line is

also used by some traders to mark the transition from an uptrend to a downtrend, or vice versa. While such signals won't always agree with price movements, a move above zero helps confirm a rising price, while a drop below zero helps confirm a falling price. The Klinger oscillator also uses divergence to identify when the indicator's inputs are not confirming the direction of the price move. It's a bullish sign when the value of the indicator is heading upward while the price of the security continues to fall. It is a bearish signal when the price is rising but the indicator is falling. Divergence can be coupled with signal line crossovers to generate trades. For example, if a bearish divergence forms, a sell or short-sell could be initiated the next time the Klinger crosses below the signal line.

Limitations: Crossovers and divergence, the two main functions of the oscillator, are prone to providing many false signals. Signal line crossovers are so frequent that it is hard to filter out which ones are worth trading and which ones aren't. Zero line crossovers also have issues, as the indicator may criss-cross the zero line multiple times before moving in a sustained direction, or the indicator may fail to move with the price resulting in a missed trading opportunity. Divergence can be useful but often occurs too early, resulting in the trader missing a large chunk of the trend, or the divergence failing to result in a price reversal at all. Also, divergence is not present at all price reversals, so it is not a reliable tool for spotting all possible price reversals. Use the Klinger oscillator only in conjunction with other technical indicators or price action analysis.

Formulas:

1. Note volume for the period, as well as the high, low, and close prices.
2. Compare this to the prior period to determine if the Trend is positive to negative.
3. Calculate dm using the current period's high and low.
4. Calculate cm using dm and the prior cm value. For the first calculation use dm in place of the prior cm value if necessary.
5. Calculate for volume force (VF).
6. Calculate the 34- and 55-period EMAs of VF.
7. Klinger used the following formula for the EMA:

$$
\begin{aligned}
&EMA = (C \times A) + (E \times B)\\
&\textbf{where:}\\
&C = \text{ Current period's VF}\\
&A = 2/(X+1), \text{ where } X \text{ is the moving average}\\
&\qquad \text{period (34 or 55)}\\
&E = \text{Prior period's } EMA\\
&B = 1 - A
\end{aligned}
$$