BOLLINGER BANDS

Bollinger bands is commonly used volume indicator, created by John Bollinger, that can show you not only what direction prices are going but also how volatile the price movement is. Bollinger bands consist of two bands—an upper band and a lower band—and a moving average that are generally plotted on the price movement of a chart.

Bollinger bands are typically based on a 20-period moving average. This moving average runs through the middle of the two bands. The upper band is plotted 2 standard deviations above the 20period moving average. The lower band is plotted 2 standard deviations below the 20period moving average.

The three Bollinger bands for N-day are calculated as -

$$
\begin{aligned}
&Central\ Band = SMA(N)\\
&Upper\ Band = Central\ Band + k \times \sigma\,(N)\\
&Lower\ Band = Central\ Band - k \times \sigma\,(N)
\end{aligned}
$$

$$Here, \sigma\,(N)\ is\ the\ standard\ deviation\ of\ the\ closing\ price\ for\ last\ N\ days.$$

$$k\ is\ a\ parameter\ to\ be\ set\ by\ the\ user, which\ is\ usually\ set\ to\ 2.$$

When to use…

1) Sharp price changes tend to occur after the bands tighten, as volatility lessens.

2) When prices move outside the bands, a continuation of the current trend is implied.

3) Bottoms and tops made outside the bands followed by bottoms and tops made inside the bands call for reversals in the trend.