

## Technical Indicators II: Moving Averages

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What is moving average?

Moving average is the average rate of a currency pair over a set period. For example, if you conduct a 20-day moving average (20 day MA), you simply add the close price of the past 20 days and divide it by 20. This is called a simple moving average (SMA).

The most common parameters for moving averages are 5, 10, 20, 50 and 100. The smaller the time frame, the more reactive and sensitive is the indicator to the market movement. The longer the time frame, the smoother is the moving average. Traders should keep in mind that the longer the time frame, the more reliable is the study.

Moving averages show the direction of the trend. As shown in the above chart, the shorter the time frame, the more sensitive is the SMA to the direction of the trend. In an up-trend, the shorter time frame averages should be above the longer ones, where the current price should be above the shortest SMA.

SMA, EMA and WMA

There are few varieties of the moving averages. The most common ones are: Simple Moving Average (SMA), Exponential Moving Average (EMA) and Linearly Weighted Moving Average (WMA). EMA and WMA are under the moving average family that they put more weight on recent data in calculations. They react faster than SMA to the current price movement. As shown on the chart below, 10 WMA is more sensitive to the current price movement than the 10 SMA.

## Applications of Moving Average

### 1. Direction of the trend

Moving averages can show the direction of the current trend. Generally, an up-trend is confirmed when a short-term moving average crosses above a long-term one, and the short-term moving average remains above the long-term moving average. Conversely, a downtrend is confirmed when a short-term moving average crosses below a long-term one, and it remains below the long-term moving average.

Traders can recognize the direction of the trend with reference to the direction of the trend line and their order of arrangement.

### 2. Support and resistance

The moving averages can act as support and resistance lines. In an up-trend, the SMAs below the rising price can act as support levels. If there is a retracement, the price is likely to bounce off the moving averages. It is the same for a downtrend movement, that the SMAs above the falling price can act as resistance levels.

As shown in the chart below, EUR/USD has experienced a strong downtrend since April 2005. The price retraced a couple of times to the 10 day SMA, however failed to break through and followed with subsequent drops.

The longer the time frames of moving averages are regard as stronger support or resistance than shorter time frames ones. When the price hits the longer time frame moving average, it means a stronger retracement. Traders can combine the candlestick patterns when decide to trade with the moving averages. For instance, a selling decision in a downtrend can be confirmed by price retracement to a 20 day SMA level and a bearish engulfing pattern.

### 3. Crossovers Signals

Whenever a shorter-term moving average crosses over a longer-term one, it indicates that there is a momentum shift. Traders can use this opportunity to enter a trade in the direction of the crossover.

Since the shorter-term moving averages react more quickly to the market price, a crossover indicates a change of sentiment in the market. In the chart below, the 10-day SMA cut above the 20-day SMA in April 2006, it was a bullish crossover. It indicated an upward momentum. Later in June 2006, the 10-day SMA cut below the 20-day SMA, it indicated the up-trend had lost its momentum and the downtrend was

in control. Traders can use the crossovers as entry and exit signals of trades.

The shorter term moving averages generate more crossovers as they react more quickly to the market. However, they also generate more false signals. Traders are recommend to trade the moving averages along with other technical analysis tools, like candlestick patterns or other technical indicators.

#### Limitations of Moving Averages

Moving averages are best to apply in a strong trending market, otherwise, there can be too frequent crossovers that includes many false signals.

In the chart below, USD/CHF was going an up-trend and there were many retracements to the support line.

There were numerous crossovers between the 10-day SMA and 20-day SMA. In this case, the crossovers were inexact signals and they do not take into account the price in relation to the support level. Trading based on SMA crossovers requires caution and better to wait for other signals or candlestick patterns to confirm the trade once a crossover signal occurs.

