



A Fidelity Investments Special Event

Common Indicators

Simple Moving Averages, MACD and Bollinger Bands

BROKERAGE: TECHNICAL ANALYSIS





Technical Indicator Basics

What Is a Technical Indicator?



A technical indicator is a mathematical calculation based on historic price or volume.



Types of Technical Indicators

Trend Indicators

**Simple Moving Average (SMA), Moving Average
Convergence/Divergence (MACD)**

Exponential Moving Average (EMA), Average Directional
Movement Index (ADX)

Momentum Indicators

Stochastic Oscillator, Relative Strength Index (RSI)

Volume Indicators

On Balance Volume (OBV), Money Flow Index (MFI),
Accumulation/Distribution

Volatility Indicators

Bollinger Bands®, Average True Range (ATR)

Support and Resistance Indicator

Fibonacci Retracements



Trend Indicators

Simple Moving Average (SMA)

Description

Moving averages are one of the core indicators in technical analysis, and there are a variety of different versions. SMA is the easiest moving average to construct. It is simply the average price over the specified *period*. The average is called "moving" because it is plotted on the chart bar by bar, forming a line that moves along the chart as the average value changes.

How It Works

Determine trend direction

- If the SMA is positively sloping, the trend is up.
- If the SMA is negatively sloping, the trend is down.

Determine trend duration

- 200-bar SMAs are common proxies for long-term trends.
- 50-bar SMAs are typically used to gauge intermediate trends.
- Shorter-period SMAs can be used to determine short-term trends.

Determine trading signals via price crosses

- When prices cross above the SMA, you may want to go long or cover short.
- When prices cross below the SMA, you may want to go short or exit long.

Simple Moving Average



Notice the varying sensitivities to price that the different period SMAs display.

- When a more sensitive (faster) MA crosses above a less sensitive (slower) MA from below it is considered bullish.
- When a more sensitive (faster) MA crosses below a less sensitive (slower) MA from above it is considered bearish.



Moving Average Convergence/Divergence (MACD)

Description

The Moving Average Convergence/Divergence indicator is a momentum oscillator primarily used to trade trends. Although it is an oscillator, it is not typically used to identify overbought or oversold conditions. It appears on the chart as two lines which oscillate without boundaries.

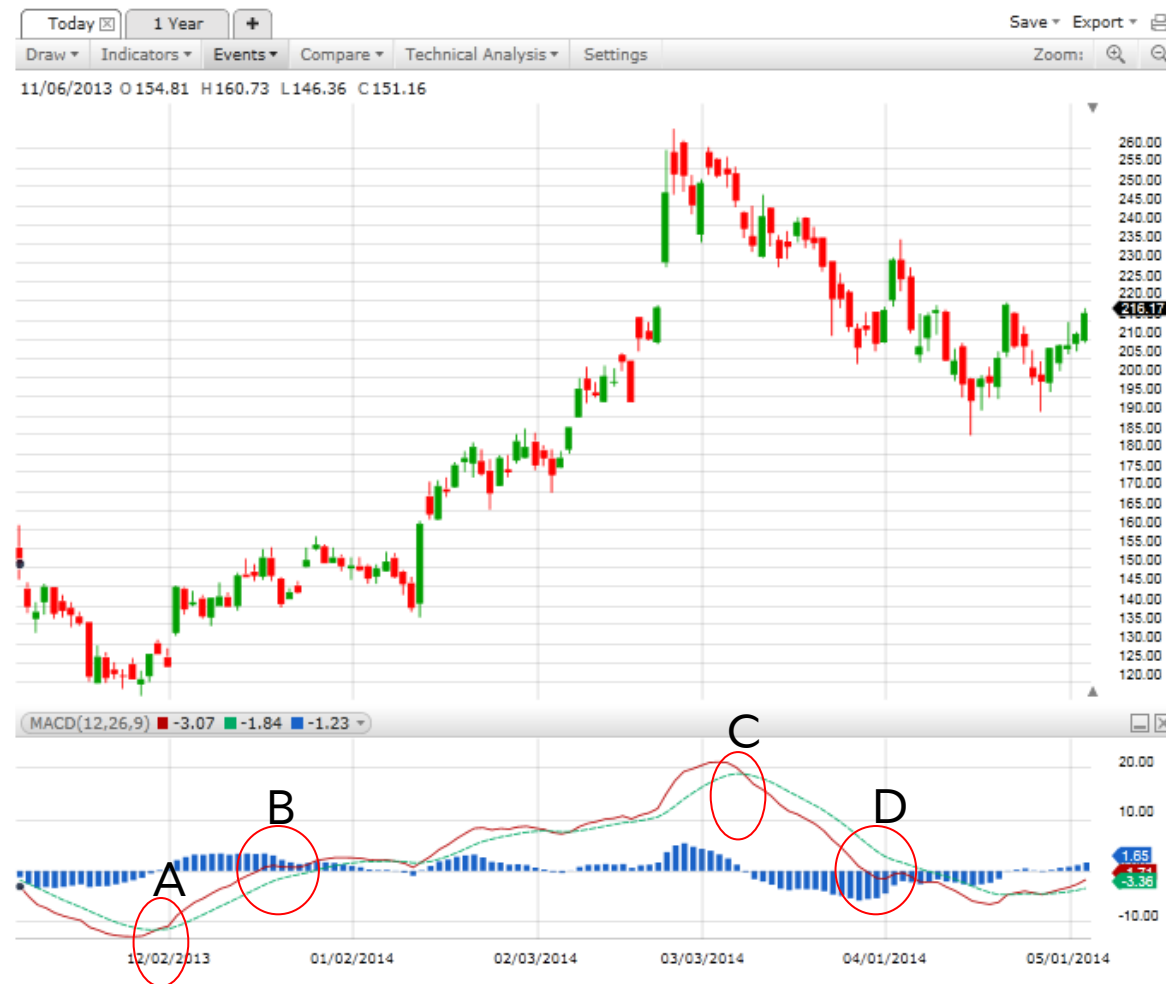
How It Works

- MACD **crossing above zero** is considered bullish, while crossing below zero is bearish. Secondly, when MACD **turns up from below zero** it is considered bullish. When it turns down from above zero it is considered bearish.
- When the MACD line **crosses from below to above the signal line**, the indicator is considered bullish. The further below the zero line the stronger the signal.
- When the MACD line **crosses from above to below the signal line**, the indicator is considered bearish. The further above the zero line the stronger the signal.

MACD



- A. MACD crosses above the signal line (bullish)
- B. MACD crosses above 0 line (bullish)
- C. MACD crosses below signal line (bearish)
- D. MACD crosses below 0 line (bearish)





Volatility Indicators

Bollinger Bands



Description

Bollinger Bands are a type of price envelope developed by John Bollinger. Bollinger Bands are envelopes plotted at a standard deviation level above and below a simple moving average of the price. Bollinger bands help determine whether prices are high or low on a relative basis.

How It Works

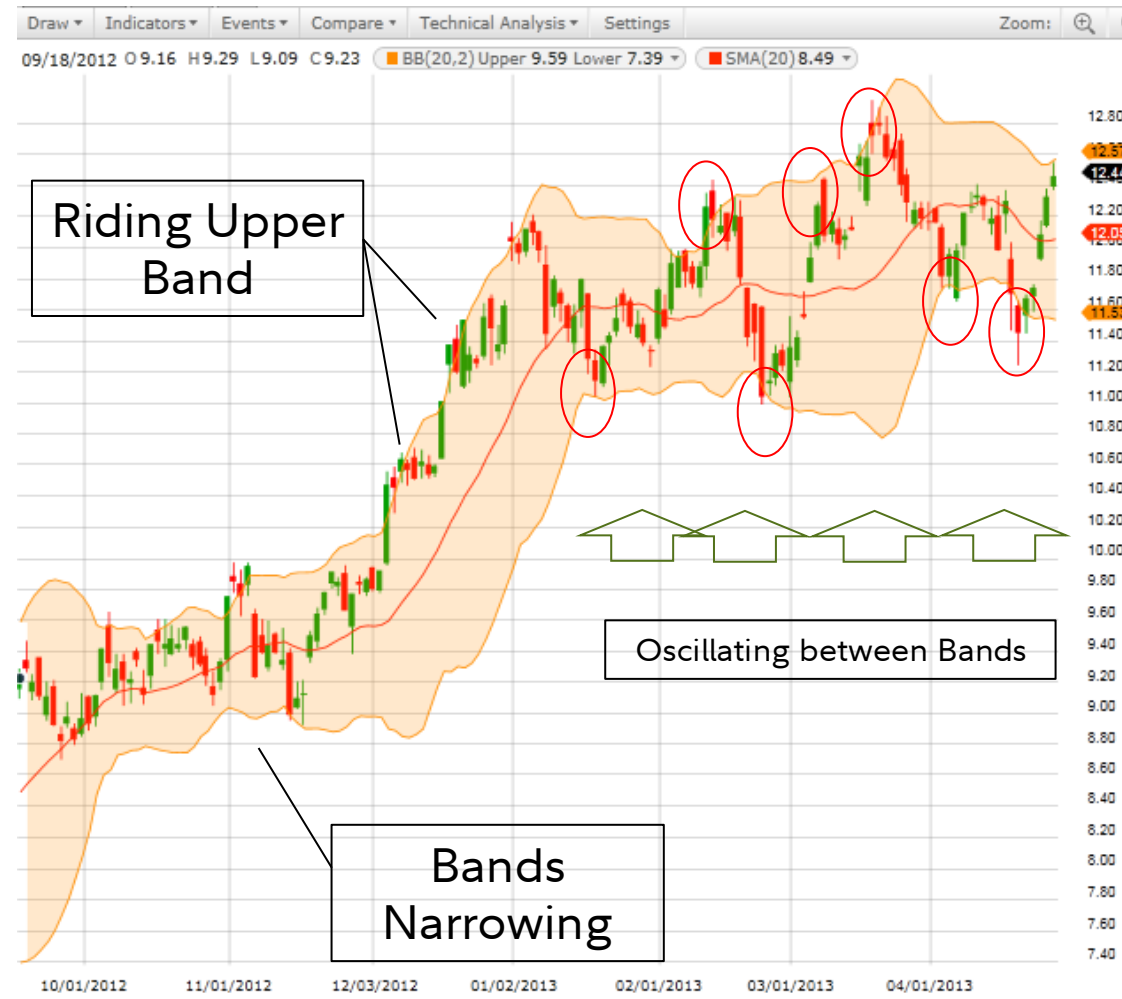
- When the bands tighten during a period of low volatility, it raises the likelihood of a sharp price move in either direction. This may begin a trending move.
- When the bands separate by an unusual large amount, volatility increases and any existing trend may be ending.
- Prices have a tendency to bounce within the bands' envelope, touching one band then moving to the other. You can use these swings to help identify potential profit targets.
- Price can exceed or hug a band envelope for prolonged periods during strong trends.
- A strong trend continuation can be expected when the price moves out of the bands. However, if prices move immediately back inside the band, then the suggested strength is negated.

Bollinger Bands



This example illustrates many of the central concepts employed while using Bollinger Bands:

- Narrowing or widening bands
- Riding the upper or lower band
- Price action oscillating between bands



Summary

- **Technical indicators are generally classified as one of the following:**
 - Trend
 - Momentum
 - Volume
 - Volatility
 - Support and Resistance
- **Analysis of technical indicators is just one aspect of Technical Analysis.**
- **To be effective, more methods need to be incorporated.**
- **Technical Analysis is most effective when various methods and indicators are used in conjunction with one another.**
- **There is no "right" or "best" combination of indicators or tools**

Additional Resources on Fidelity.com



The Learning Center offers additional resources for Technical Analysis.

News & Research → Learning Center → Investing and Trading Strategies → Using Technical Analysis

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Additional Resources in Active Trader Pro®



Fidelity's Active Trader Pro® platform offers additional resources for education found under the Help menu:

Help → Learning Center →
Technical Indicator Guide

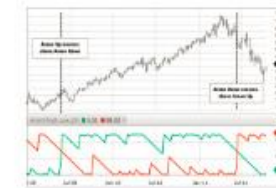
Technical Indicator Guide

The Technical Indicator Guide is an educational tool that can help you learn about the indicators and overlays that are available on Fidelity's platforms. Technical Analysis uses historical data in order to attempt to identify future securities price movements. When used in conjunction with other technical analysis tools or fundamental analysis, it can help you identify possible entry and exit points for trades and may help you achieve your investing goals.

GUIDE

Aroon Indicator

The Aroon indicator, developed by Tushar Chande, indicates if a price is trending or is in a trading range. It can also reveal the beginning of a new trend, its strength and can help anticipate changes from trading ranges to trends.



All Technical Indicators

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Indicator	Type	Class
Absolute Price Oscillator	Trend	Oscillator
Accumulation Distribution	Volume	Cumulative
Arms Index (TRIN)	Volume	Oscillator
Aroon Indicator	Trend	Oscillator
Average Directional Movement Index (ADX)	Trend	Index
Average True Range (ATR)	Volatility	Index

Thank You



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Technical analysis focuses on market action – specifically, volume and price. Technical analysis is only one approach to analyzing stocks. When considering which stocks to buy or sell, you should use the approach that you're most comfortable with. As with all your investments, you must make your own determination as to whether an investment in any particular security or securities is right for you based on your investment objectives, risk tolerance, and financial situation. Past performance is no guarantee of future results.

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