CJ Investment Mini-Lessons
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Mini-Lesson: MACD

One of my favorite trend-following indicators is the MACD – Moving Average Convergence-Divergence. It's generally pronounced "Mac-D." The MACD was devised by Gerald Appel, an analyst and money manager in New York.

The MACD is constructed from three exponential moving averages (EMA's) of the closing price of a security or index. The arithmatic difference between a shorter EMA and the longer EMA creates the MACD or "fast" line. The Signal or "slow" line is calculated as a short EMA of the MACD line. The fast and slow lines are then plotted on a graph as the lines themselves or as a histogram. I actually plot both types in the same graph as they provide me slightly different, but important information.

By comparing the *differences* between faster and slower moving averages, the MACD attempts to show underlying trends and, more importantly, trend *changes* not obvious from observing price action alone. Crossover points can often be signals for entry or exit from securities positions.

One particularly powerful signal from using a MACD is a *divergence*. A *bearish divergence* is when price action peaks would rise while the MACD lines (or histogram) would have declining peaks. This indicates the upward move is losing power and is likely close to an end. A *bullish divergence* would consist of declining price bottoms with rising MACD bottoms. Alexander Elder, a famous technical analyst, considered a MACD divergence to be the "strongest signal in technical analysis." I tend to believe this when the signals are aligned with the primary trend. In my experience, a bullish divergence in a bull market is a powerful signal, whereas a bullish divergence in a bear market is much less reliable.

The classic MACD is calculated using the difference between 12- and 26-day EMA's for calculating the fast line. The fast line is then smoothed using a 9-day EMA to create the slow line. I do not use these periods for my calculations. Instead, I use periods that are *time sequenced* to correspond with other indicators I use in order to get multiple confirmations of trends or changes.

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