



ClearStation Education: Reading Graphs

Version 2.0
Copyright © 1998-2000 ClearStation, Inc. All rights reserved.

Table of Contents

Reading Graphs

Price Graph

Price Graph Basics	4
Trending Bar Basics	5
More on Trending Bars	6
Color Coded Assessment	7
Promising Looking 52-Week Price High: COST	8

Indicator Graphs

MACD: Not Just a Burger	9
On the Downside	10
The Fast and Slow	11
The Histogram in Brief	12
When the Timer Goes Off	13

Reading Graphs

Price Graph

Indicator Graph

The first thing you want to be able to do is read ClearStation graphs: you make your initial assessments of a stock based on what you see on these graphs. A firm understanding of these graphs is the first step toward solid investment choices using technical analysis. They offer important information - if you know what you're looking for!

In this section, you'll learn:

- How to read a **price graph**
- What **trending bars** are and how they work
- The basics on **MACD**, **MACD histogram**, and **stochastic** (more in-depth information will be provided in later chapters)

Price Graph Basics by kathia

Lucent Technologies Inc (LU)



ClearStation's graphs facilitate quick assessment by displaying important data clearly.

The top chart is the **price graph**. This graph charts a stock's price over time. The bars across the top of the price graph are trending bars (green for uptrends, red for downtrends). Generally, you want to go long stocks whose graphs show predominantly green bars and short (or avoid) stocks where red predominates.

- The price bars are usually drawn in red. The bottom of the price bar marks the low for that day, and the top indicates the high. On the right side of the bar, a tiny horizontal red dash marks the closing price. It's bullish if the closing price is near the high of the day, and bearish if the closing price is down toward the day's low.
- Every now and then you'll see a blue bar instead of a red one. A blue bar indicates that the stock reached a 52-week record price high that day.
- The 50-day exponential moving average (EMA) is drawn in purple. The 13-day EMA is drawn in green. These lines identify the overall direction of the price of a stock. **The most important thing to note is whether prices are above or below these two moving averages.** The "Moving Averages" section explains how to use this information when making a trade.

Trending Bar Basics by kathia

Edac Technologies Corp (EDAC)



The trending characteristics and capabilities of a stock are the most important pieces of information the price graph has to offer.

The green and red bars that trace across the top of the price graph describe the ability of that stock to move in a persistent vertical direction (up or down) over time. **A green bar suggests an uptrend (vertical movement up) and a red bar suggests a downtrend (vertical movement down).** You want to go long in stocks in which green predominates and avoid or short stocks in which red predominates. If neither color dominates (but rather, a candy cane effect with rapid switching from red to green), that suggests the inability of that stock to make sustained progress in either direction. Unless you are a short-term or day trader, you want to avoid stocks that exhibit this non-trending characteristic.

If you receive an anonymous tip for a stock whose graph is dominated by red bars, you want to hang up the phone. If green dominates, start taking notes!

We have gone to great lengths to map what MACD is saying on top of the price graph in order to provide the clearest, most unbiased assessment of whether a stock trends or does not trend. Trending is the first assessment to make when considering a stock for purchase.

Some stocks trend. Others do not. **It is far easier to make money in stocks that trend vs. stocks that do not trend.** If a stock trends, the bars will appear above prolonged periods of persistent price action in one direction.

Edac Technologies Corp trends. The bars are fairly well timed.

More on Trending Bars by kathia

ClearStation's software considers a number of different variables before determining that a stock deserves a trending bar on its price graph. Among the most important of these variables are EMAs and MACD. Of course, we also consider other factors: volume, general volatility, and history to name a few.

In other words, whether the bars appear isn't determined by just one indicator; a combination of events causes them to go up or down.

Crossovers are turning points for trends. Whenever a crossover happens, whether it's the EMAs or MACD, it's likely that a trending bar will be triggered. Here are some guidelines to keep in mind:

- When the 13-day EMA crosses over the 50-day EMA, that's a clear sign of an uptrend. The 50-day EMA crossing over the 13-day signals a downtrend.
- For MACD, determining whether the crossover is going to cause a trend is trickier. It really depends on where the crossover happens (as well as on what's going on with the other indicators). If the red fast line crosses over the blue slow signal at or above the centerline, you have a trend. But if the crossover happens below the centerline, you don't. A trend doesn't occur until the lines sail up past the centerline -- and then only if the other indicators are healthy.

Downtrends are just the flip side. The blue slow signal must cross over the red line below the centerline for it to really count.

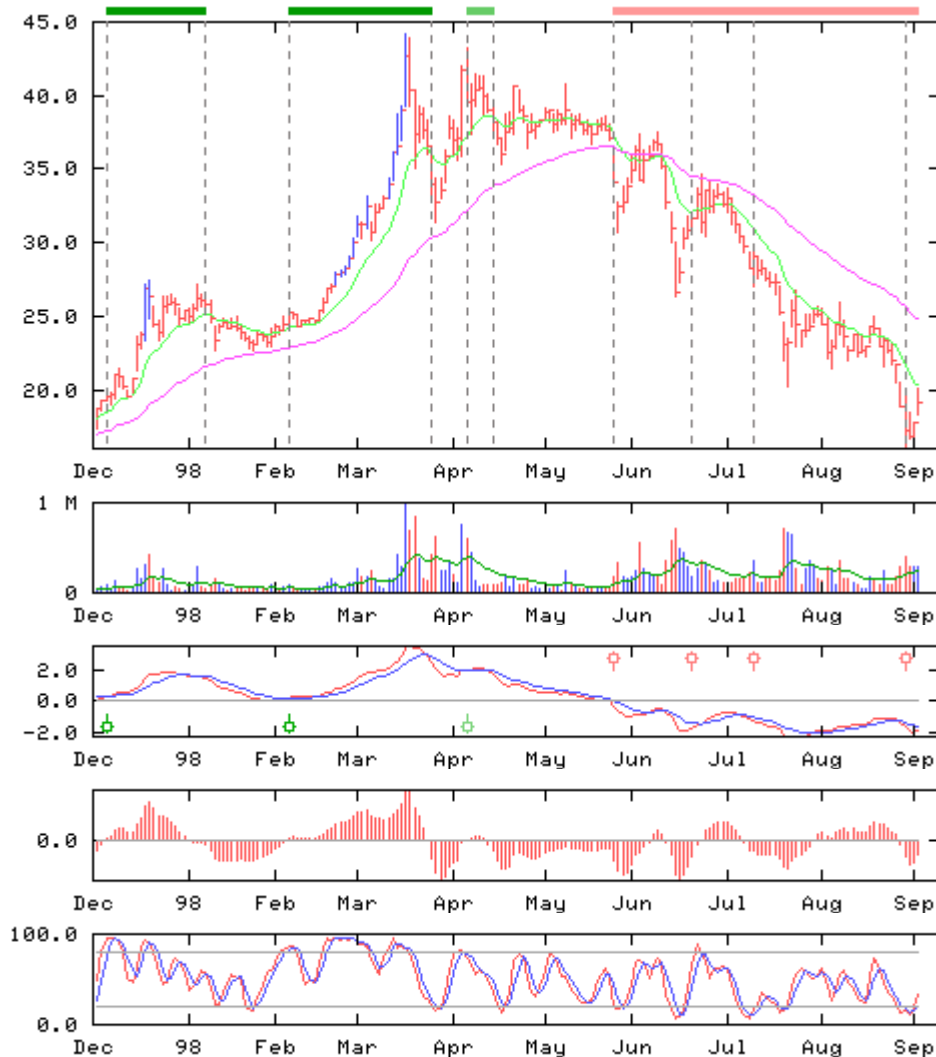
(Note: You'll learn more about MACD in upcoming articles. If you don't understand how it works now, you should by the time you read through Education.)

Any of the same factors can cause a trending bar to "go down". When a trending bar goes down, that trend is said to have "stopped out" or "paused".

Sometimes the end of the trending bar signals a definitive break in the trend. However, it could be pausing (or catching its breath) before starting another leg of a longer, ongoing trend.

Color Coded Assessment by kensey

Ballard Power Systems Inc (BLDPF)



Stock market players all over the world follow each uptick and downtick. They act independently, but a record price high means that a consensus has been reached on a particular stock.

On ClearStation graphs, 52-week price highs are drawn in blue, so you can get an instant assessment of each stock's ability to lead. There are many investors who only follow and consider for trade those stocks that have reached a 52-week price high. William O'Neill has made a career out of this.

Professional traders tend to fade (or short) record price highs if they appear to be of dubious merit. Most of us simply climb on board. The important thing to watch when a stock reaches a record price high is whether or not there will be follow-through. BLDPF was not able to follow through after hitting a 52-week price in December, yet it was able to do extraordinary things after it hit a 52-week price in February.

What to do?

ClearStation offers lists that provide the opportunity to evaluate and consider stocks for trade before the 52-week price arrives. Stocks will most likely already be in MACD green when price highs hit (this was true in both cases for BLDPF). While it is not a definite rule, it is true more often than not.

So, 52-week price highs often arrive late. The guard dog has already barked. As such, 52-week price highs are continuation events. They confirm the trend that is already in place. Actually, one of my initial motivations to build ClearStation was that I was tiring of having stocks pop onto my radar screen only after a price high had been reached. I'd look back and say, "Wow, this stock has been in an uptrend for over a month."

If you try to time your purchases with an eye toward the trend bars drawn on top in green vs. price bars drawn in blue, you will be in a much better position to take advantage of a stock's trend. Rarely does a 52-week price high mark the beginning of a trend.

Promising Looking 52-Week Price High: COST by kensley

Costco Companies Inc (COST)



Costco hit a 52-week price high on Friday (May 29th). This is illustrated on the price graph by the blue price bar. How is this event to be evaluated?

First, look at some of the other interesting events that are occurring here. At the same time the record price high was hit, a green trending bar appeared on the top of the price graph to signal the start of a new leg of Costco's ongoing bull trend. There is also a very impressive stack of blue bars on the volume graph. A blue bar on the volume graph means that the stock went up that day. Had it gone down, a red bar would have been drawn. The volume we are seeing here is similar to the hardcore buying that occurred in late February. Market conditions were a bit more favorable back then, and this fact is the one caveat that must be kept in mind.

So the price high is interpreted here as a true bullish event. The important ducks seem to be lined up: a green trending bar, big volume, a crossover of the MACD lines at the centerline, and (of course) the record price high.

Accumulation seems to be in order. Pay heed to the fact that the current price is quite elevated over the 13-day EMA. Stocks have a tendency to trace back and touch the 13-day EMA after a strong run up. So you will want to back in slowly. If, in fact, Costco opens lower next Monday (Lord knows what the market's gonna do next week), 55 dollars is the ideal price level to start picking up shares. If there is a serious rollover in the markets on Monday, then it's fodder for the Watch List.

MACD: Not Just a Burger by kathia

The first thing to check out when you're interested in a stock is the trending bars above the price graphs. Why? Because you make money by riding out stocks that are trending.

But after getting an initial impression of which direction a stock is trending you should **always** study the MACD (Moving Average Convergence-Divergence) graph.

The MACD graph (third graph from the top) has a fast line (the red one) and a slow signal (the blue line). **The crossing of the red line over the blue can denote the beginning of a trend.** The uptrend typically stops when the blue line crosses above the red.

Where the crossover happens tells you whether there is a trend and how strong it is. When the red fast line crosses over the blue line at or above the centerline (which serves as a constant at a zero value), the stock is trending hard - a definite candidate for a long position! The higher above the centerline it crosses, the stronger the uptrend is. If the crossover occurs below the centerline, the uptrend indicated is not nearly as strong

America Online Inc (AOL)



Let's take a look at AOL. This stock has been in an uptrend for months. Pretty evident from the price graph, don't you think?

Check out the green bars over the price graph. Now look at the MACD graph (third graph from the top). See how, each time the red line crosses over the blue, a green bar is born over the price graph? See how the price goes steadily up when this happens? (The green bar disappears when blue prevails over red.)

Did you notice where the centerline on the MACD graph (0.0) is in relation to the crossovers? Each time the two lines cross higher above the centerline, the uptrend gain more momentum, and the price rises with more intensity.

To stress it again, the easiest way to make money is by latching onto a stock like AOL that is trending big time. In six months you could have doubled your investment. **That** is the power of MACD.

On the Downside by kathia

Microlog Corporation (MLOG)



Microlog has been downtrending for a while. My first clue was the red bars over the price graph, but I don't rely solely on these. Don't get me wrong - they give you the heads up on what kind of position you might take, but I personally like a little more reassurance. Call me cautious.

After checking out the MACD bars over the price graph, I always examine the MACD graph (third from the top). The graph provides a more in-depth look at how strong the trend is. I keep an eye on a stock that is trending; I take action when a stock is trending hard.

Downtrends occur when the blue line crosses over the red. (Well, not always... It also depends on where the crossover takes place. When the blue line rears its ugly head and bypasses the red line above the centerline, a downtrend doesn't get signaled until the lines drift below the centerline.)

The centerline plays an important role in determining how strong a downtrend is. If a crossover takes place **below** the centerline, that's a fairly good indication that the stock is indeed in a downtrend. The farther it crosses below the centerline, the better! (If, of course, you are shorting that stock.)

The Fast and the Slow by kathia

Understanding MACD boils down to one thing: being able to understand the relationship between its two lines, the fast line (in red) and the slow signal (in blue).

Each line is an exponential moving average.

- The fast line results from the difference between the long- and short-term moving averages. To be more precise, the 26-day EMA of the closing price (the long-term moving average) subtracted from the 12-day EMA of the closing price (the short-term) gives you the calculation for the fast line.
- The slow signal is a moving average of the fast line. You derive the slow signal by calculating the 9-day EMA of the fast line.

Just by watching how these two lines interact, you can glean vast amounts of information about a stock. The two most important things to watch are the meeting and crossing over of the lines and where in relationship to the centerline they cross.

Crossovers and the Centerline

Crossovers can signify trends. For example, the red line crossing and rising above the blue line could signal the start of an uptrend. Likewise, the blue line crossing over the red could be the start of a downtrend. What determines whether the crossover is strong enough to signal a trend is where it happens. That's what really counts.

The centerline is the key! Where a crossover happens in relation to the centerline can offer a strong indication of where that stock is headed.

- When the red fast line crosses over the blue slow signal above the centerline, that is a good indication of a bullish trend. The higher above the centerline the lines cross, the stronger the trend acts.
- When the blue line crosses over the red above the centerline, it does not necessarily mean that there is a big downtrend looming in the distance. It can also signify a pause in the current uptrend. The stock could be taking a breather before it lifts off again.

This happens often. Some graphs to study are AOL, C, and CSCO.

- If the red line crosses over the blue line below the centerline, it can mean that the downtrend is stopping out (or pausing), or it could be that things are turning around and the stock is heading for an uptrend. However, because the crossover happened below the centerline, the trend probably won't be too strong. In cases like that, the graph doesn't get marked with a green trending bar until the lines have moved up over the centerline -- and then only if the other indicators are positive as well.
- The blue line crossing over the red below the centerline is a good sign of the beginning of a downtrend. Keep in mind that the farther below the centerline the crossover takes place, the stronger the trend!

The Histogram in Brief by kathia

The MACD Histogram (second from the bottom) is used in conjunction with the MACD graph. When the fast line on the MACD graph (the red one) is sailing over the signal line (the blue), the bars on the Histogram are drawn above its centerline. When the blue line is over the red, the bars are below the centerline.

The slope of the bars gives you a better idea of how strong a trend is: as a trend gains momentum, the bars grow progressively longer. As it slows down, the bars get shorter and shorter.

Chrysler Corp (C)



The beauty of the Histogram is that it signals reversals in trends. Sometimes signals can be deceiving; you may think a stock is doing really well when in reality it's going to take a nose-dive.

What to look out for:

- When a stock breaks a record price high but the Histogram is responding limply in tiny bars, bad sign! Sell. Basically, it means that though at the moment the bulls are showing off their strength, the bears are really in control of the situation. A good example of this is Chrysler. Take a look at the graph - specifically mid-April. There's a MACD green bar over the price graph, and it hit record price highs, but the MACD Histogram is only exhibiting small bars. Watch how the price action went during that MACD green period -- the price just kept falling.
- When a stock hits a record low and the Histogram is lurking below the centerline, it's a good idea to consider buying that stock.

When the Timer Goes Off by kathia

Making a decision about what kind of position to take on a stock is much like cooking a roast.

For the roast to be cooked perfectly, all the conditions have to be just right. A pan that it will fit in, a hot oven, a timer so you don't overcook--they all work together to produce a succulent meal. If the oven is too hot or the timer isn't set properly, you might be stuck with a hunk of charred meat.

Stocks work the same way. All the conditions, or indicators, need to be used in sync for the best results. When you use the indicators in conjunction with each other, the chances that you'll make a more profitable decision increase.

If MACD is the hot oven, then stochastic is the timer. Stochastic follows the short-term movements of the stock and gives you an idea of when to take action.



Stochastic (the bottom graph) is shown by two lines (red and blue) fluctuating between 0 and 100. At the 20 and 80 marks, there are horizontal gray lines.

When the red and blue lines dip together under the 20 line, it means the stock is oversold (everyone is selling). When the lines float together above the 80 mark, the stock is overbought (everyone and his/her mother is buying).

So what does it all mean? Provided the other indicators are healthy, you want to buy when a stock is oversold because the short-term prices are likely to rise. Sell when a stock is overbought, and short-term prices are likely to fall!

How is stochastic handy? In late March, do you see how stochastic was indicating that the stock was overbought? Both the red and blue line are sailing over the 80 mark. The wise option would have been to wait until early April when the lines fell below the 20 mark (meaning the stock was oversold) to buy. If you look at the price graph again, you'll notice that at that point the price had fallen a bit right before it was about to coast up again.

A word of caution: stochastic is an indicator of **short-term** activity! It shows you when a stock's price is oscillating (moving up and down in a range) rather than trending (moving in one direction continuously). Be careful not to base long-term actions on it.