BRIAN TAYLOR

Combining Two Indicators

The JK HiLo Index

No single indicator will accurately forecast or coincide with every market top or bottom. Here, two indicators have been combined to form one indicator that can increase your chances of identifying buy or sell points.

by Jay Kaeppel

As a student of the market, I have crunched a few numbers over the years. At the same time I have tried, and cautioned others also, to avoid the temptation to divide one number by another or multiply one number by another simply because we can.

Not every calculation involving market indicators enjoys any real purpose. In addition, many indicators react in a manner similar to other indicators. Almost all overbought/oversold indicators tend to get more oversold as the market declines and more overbought as the market rallies. So stringing together more than a handful of similar indicators does not necessarily provide any additional benefit.

Still, when paired together, even similar indicators can be different enough in their construction and interpretation to be useful sometimes. This article details an indicator I have dubbed the "JK HiLo" index (or JKHL for short).

THE STARTING POINT: TWO HIGH/LOW INDICATORS

First, I will look at two different indicators that have each proven useful on their own merits and then combine them. For our purposes I will use NASDAQ data rather than NYSE data. The only data we need are the daily values for the following items:

- Number of issues traded on the NASDAQ
- Number of new 52-week highs
- Number of new 52-week lows

Everything else is derived from these values.

INDICATOR 1: THE NASDAQ HIGH/LOW LOGIC INDEX

The first indicator is the NASDAQ high/low logic index. The original high/low logic index, which was created by Norman Fosback using NYSE data, was detailed in his 1975 classic work *Stock Market Logic*. What he discovered in the course of his research is that:

a If new highs or new lows are at an extremely low level, this tends to be a bullish sign for stocks. The underlying theory is that if few stocks are making new lows, this typically indicates a market in the midst of a strong uptrend, and if few stocks are making new highs, this typically indicates a market that is deeply oversold and due for a rally.

b If both new highs and new lows are registering very high daily readings, this tends to be a bearish sign for stocks. A large number of new highs and new lows occurring at the same time suggest a market that is "churning," a phenomenon that is often followed by lower stock prices.

In his original work, Fosback used the NYSE data, but remember we are using NASDAQ data. Figure 1 displays the NASDAQ high/low logic index at the bottom with the NASDAQ (divided by 500) overlaid since January 1988 (veteran traders will remember the NASDAQ Composite by its earlier incarnation, the "OTC Composite"). A close examination of Figure 1 reveals that low high/low logic index readings coincide with market lows and/or bull markets, while high readings are more indicative of an impending decline.

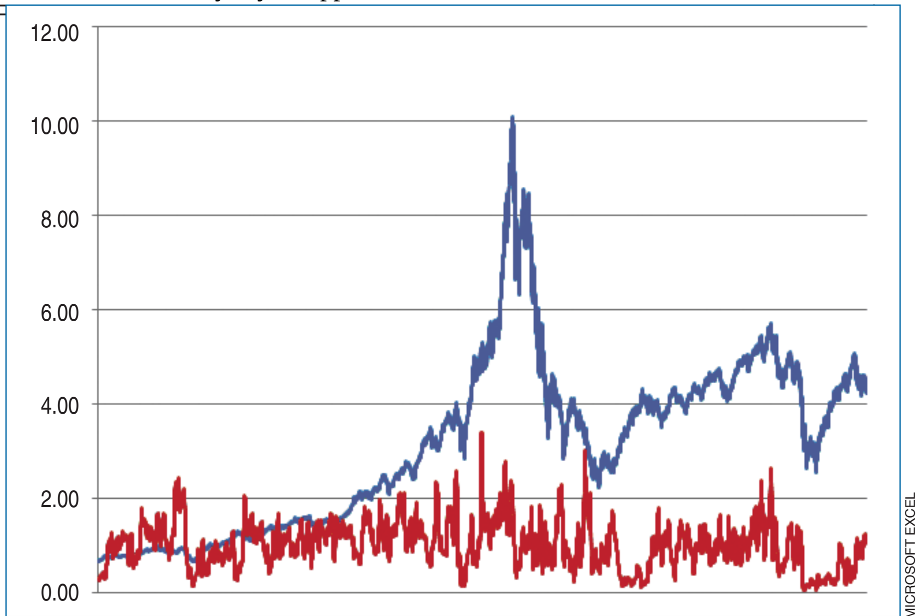


FIGURE 1: HIGH/LOW LOGIC INDEX (WITH NASDAQ DIVIDED BY 500) SINCE 1988. Low high/low logic Index readings tend to coincide with market lows and/or bull markets, while high readings are more indicative of an impending decline.

INDICATOR 2: NEW NASDAQ HIGHS/NEW HIGHS PLUS NEW LOWS (10-DAY AVERAGE)

The second indicator is based on the daily number of NASDAQ new highs as a percent of daily NASDAQ new highs plus daily new lows. This measure is calculated by simply dividing the number of NASDAQ stocks making a new high for a given day by the number of NASDAQ stocks making either a new high or a new low on that day as follows:

NASDAQ new highs/(NASDAQ new highs + NASDAQ new lows)

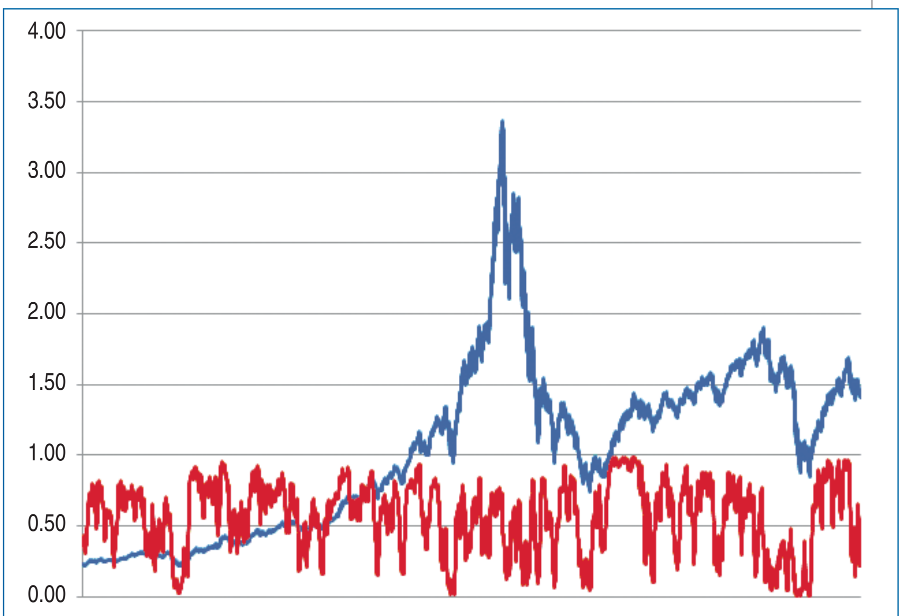


FIGURE 2: NEW HIGHS/NEW HIGHS PLUS NEW LOWS (WITH NASDAQ DIVIDED BY 1500) SINCE 1988. As a bull market unfolds, the number of new lows typically shrinks considerably and the number of new highs expands, and thus, this indicator rises to higher ground.

The resultant value can range from zero to 1. Low readings indicate a dearth of stocks making new highs. While low and/or declining values can accompany market declines, ultimately, low readings tend to highlight market bottoms. As a bull market unfolds, the number of new lows typically shrinks, the number of new highs expands, and thus, this indicator rises to higher ground, as you can see in Figure 2.

Here too, low readings tend to coincide with important market bottoms, while values are closer to 1.00 at market tops.

The next step is to combine these two indicators, coming up with:

THE JK HILO INDEX (JKHL)

With the JK HiLo index, a number of calculations are involved, but the good news is that it can all be entered into a spreadsheet and recalculated automatically from there. Here are the components, first in their raw form, then with a little detail:

A = NASDAQ daily total issues traded

B = NASDAQ daily new highs

C = NASDAQ daily new lows

D = Lesser of B and C

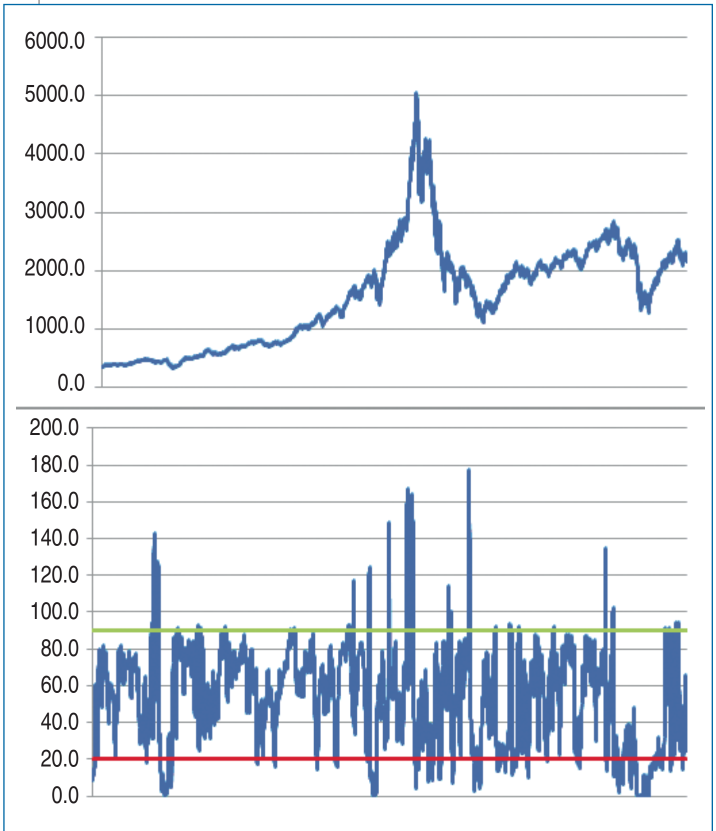


FIGURE 3: NASDAQ SINCE 1988 (TOP) WITH THE JK HILO INDEX (BOTTOM). If JKHL drops below 20, we should be looking for a bottom and/or a buying opportunity. Conversely, when JKHL exceeds 90, we should be thinking defensively and looking for a top. Sometimes, the index will highlight a major market turning point, while at other times tops and bottoms will be followed only by short but often sharp price reversals. And sometimes, a signal will just be wrong.

E = (D / A) * 100

F = 10-day simple moving average of E

G =If F >=2.15 or if F <= 0.40 then G = F, else G = 1.00

H = B / (B + C)

I = 10-day simple moving average of H

J = (G * I) *100

Now let's try it in plain English:

- A, B, and C are our original raw data components — that is, daily total issues traded, plus new highs and new lows for the NASDAQ.
- D looks at daily new highs and daily new lows and simply takes the lower of the two values each day.
- E is the lower of daily new highs and daily new lows, divided by total issues traded today.
- F is a simple 10-day moving average of E (that is, a 10-day average of the lesser of new high and new lows divided by total issues traded, calculated daily). It is the NASDAQ high/low logic index.
- G is the "adjusted high/low logic index" value. Value F is only meaningful at the extremes. For our purposes, if today's value for variable F is not greater than 2.15 or less than 0.40, we simply enter a value of 1.00 for variable G.
- H is today's new highs divided by the sum of new highs and new lows.
- I is the simple 10-day average of variable H (daily new highs divided by the sum of daily new highs plus daily new lows).
- J multiplies the adjusted high/low logic index value by the 10-day average of daily new highs as a percentage of daily new highs plus daily new lows. This value is then multiplied by 100.

The resulting value, denoted as variable J, is the JK HiLo index value for that day.

USING THE JK HILO INDEX

First, the bad news. After going to the trouble of making all of these calculations, there is the fact that this index does not constitute a trading system per se; it does not necessarily generate automatic buy and sell signals. As we will illustrate later, lower readings are considered a bullish sign and higher readings are considered a bearish sign. To have some basis from which to work, however, we will use the following guidelines:

- JK HiLo index readings ≤ 20 suggest a buying opportunity
- JK HiLo index readings ≥ 90 suggest a selling opportunity

So if JKHL drops below 20, we should be looking for a bottom and/or a buying opportunity. Conversely, when JKHL exceeds 90, we should be thinking defensively and looking for a top. Sometimes the index will highlight a major market turning point, while other times tops and bottoms will be followed only by short but sharp price reversals. And occasionally, a signal will be just plain wrong.

Figure 3 displays the NASDAQ since 1988 at the top and the action of the JK HiLo Index at the bottom.

INTERPRETING IT

Some notes on interpreting various JKHL index readings:

- Buy signals that occur when the NASDAQ is above its 200-day moving average have almost invariably been timely.
- Buy signals that occur when the NASDAQ is below its 200-day moving average act more as a buy alert, and investors would be wise to use some form of confirmation, either via price action or some other

indicator or both, before acting on a low JKHL reading.

- Once JKHL drops below 10, investors should assume that an important bottom is in the process of forming. Note that the initial signal may be early and you should wait for some indication or confirmation that the decline has run its course before jumping in to avoid the danger of attempting to "catch a falling safe." This type of action occurred in 1990, 1998, and 2008–09. In each case, JKHL highlighted the end of a major decline and the onset of a significant market advance. However, investors who acted on the first reading by JKHL below 20 would have had to sit through an intervening decline in excess of 10%.
- Sell signals that occur when the NASDAQ is below its 200-day moving average are rare but tend to be major warning signs. Such signals occurred in April and May 1990, July and August 2001, and May 2002. Each of these signals presaged a major market decline. Such signals are not to be ignored.
- Sell signals that occur when the NASDAQ is above its 200-day moving average often warn only of a slowdown or a pause in an ongoing bull market. Still, short sharp pullbacks are sometimes highlighted in advance by JKHL.
- Sharp spikes to the upside (above, say, 100) have invariably warned of the type of market downturns that awake and alert investors will attempt to avoid or will want to hedge against.

JKHL index reading	No. of days	Avg 10-day % +(-)	Avg 21-day % +(-)	Avg 42-day % +(-)	Avg 63-day % +(-)	Avg 126-day % +(-)
All days	5703	+0.4	+0.9	+1.9	+2.8	+5.9
JKHL ≤ 30	1415	+0.2	+1.2	+2.8	+4.7	+7.1
JKHL ≤ 20	781	+0.8	+2.0	+4.3	+8.4	+13.9
JKHL ≤ 10	303	+1.2	+1.9	+5.3	+12.0	+22.6

FIGURE 4: NASDAQ PERFORMANCE FOLLOWING VARIOUS JKHL LOW READINGS. Lower JKHL readings are almost invariably followed by better market performance than the average of all trading days. For almost all periods shown, the market performed better following low JKHL readings than it did on average.

JKHL index reading	No. of days	Avg 10-day % +(-)	Avg 21-day % +(-)	Avg 42-day % +(-)	Avg 63-day % +(-)	Avg 126-day % +(-)
All days	5703	+0.4	+0.9	+1.9	+2.8	+5.9
JKHL ≥ 80	775	(-0.3)	(-0.8)	(-1.2)	(-2.0)	+0.7
JKHL ≥ 90	221	(-0.8)	(-2.7)	(-3.4)	(-5.0)	(-0.7)
JKHL ≥ 100	90	(-0.8)	(-3.6)	(-5.4)	(-7.8)	(-3.4)
JKHL ≥ 110	79	(-0.4)	(-3.3)	(-5.2)	(-8.4)	(-5.3)
JKHL ≥ 120	65	+0.3	(-2.6)	(-4.0)	(-8.9)	(-7.0)

FIGURE 5: NASDAQ PERFORMANCE FOLLOWING VARIOUS JKHL HIGH READINGS. Higher JKHL readings are almost invariably followed by market performance that is worse than the average of all trading days.

I would suggest, particularly when the indicator is signaling against the current major trend of the market, that you seek some form of confirmation before acting on a given JKHL buy or sell signal. This may take the form of another indicator or some type of price reversal action.

Another matter to note is that the JKHL does not flip from buy signal to sell signal and back again. A given buy signal may be followed by only a minor rally and then later by another buy signal, without an intervening sell signal. In addition, remember that sell signals are somewhat less useful in a roaring bull market than they are when the market is in a longer-term downtrend (in which case, sell signals are often followed by swift and severe declines).

THE HISTORY

Figure 4 displays the action of the NASDAQ following various levels of "low" JKHL readings, compared to average market activity since 1990. Note in Figure 4 that lower JKHL readings are almost invariably followed by better market performance than the average of all trading days. For almost all time periods shown, the market performed better after low JKHL readings than it did on average.

At the other end of the spectrum, Figure 5 displays the action of the NASDAQ following various levels of "high" JKHL

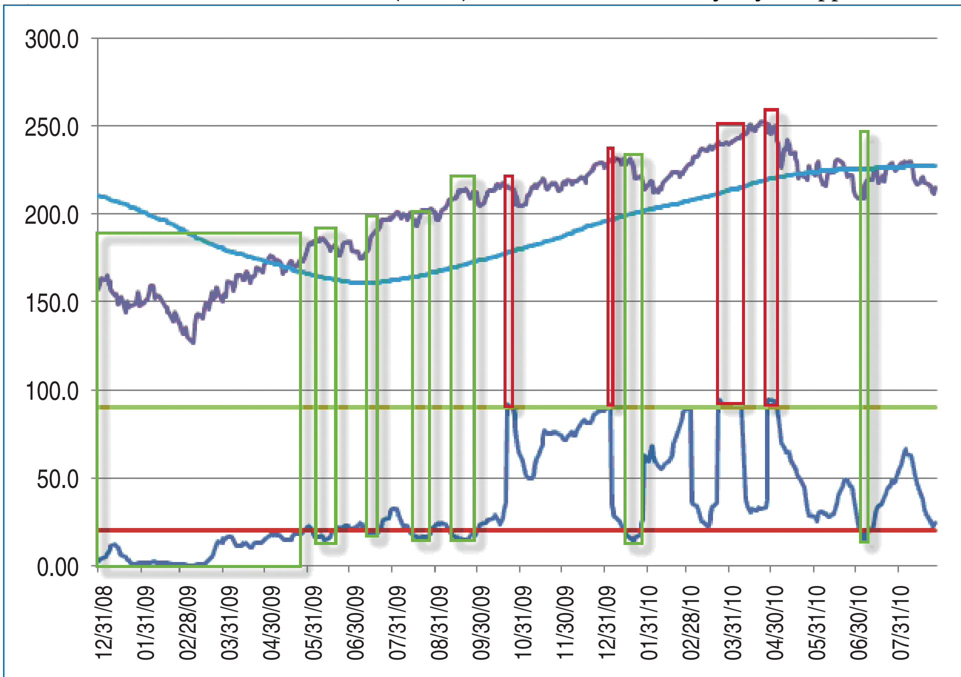


FIGURE 6: NASDAQ (TOP) WITH JKHL INDEX READINGS (BOTTOM) SINCE 12/31/2008. On the left side of the chart, you see the NASDAQ is below its 200-day moving average and JKHL is at an extremely low level. The subsequent buy signals, all of which occurred with the NASDAQ above its 200-day moving average, proved to be timely. Likewise, each of the sell signals was ultimately followed by lower stock prices.

The two useful indicators have been merged here to create an index to be just as useful on its own.

readings, compared to average market activity since 1990. Note in Figure 5 that higher JKHL readings are almost invariably followed by market performance that is worse than the average of all trading days. The numbers in Figures 4 and 5 clearly suggest that investors can use the JKHL index to identify good areas for buying and selling stocks.

Figure 6 displays the NASDAQ and JKHL between January 2009 and August 2010, with all low and high JKHL readings marked. On the left side of the chart, you see that the NASDAQ is below its 200-day moving average and that JKHL is at an extremely low level. This is the type of situation I mentioned earlier where an investor would be wise to wait for some confirmation that the decline had run its course before acting on the JKHL buy signal.

The subsequent buy signals, all of which occurred with the NASDAQ above its 200-day moving average, ultimately proved to be timely. Likewise, each of the sell signals was ultimately followed by lower stock prices.

BEST TIMES TO BUY/SELL

No single indicator will ever accurately forecast or coincide with every market top and/or bottom. Once you accept that, you can examine a variety of indicators for useful signals. The two indicators combined to create the JK HiLo index have proven to be useful on their own. Here we have merged them to create what could be an even more useful tool to help us identify fortuitous times to buy and/or sell stocks.

Jay Kaeppel is an independent trader and author, a trading strategist with Optionetics, Inc., and writes a weekly column titled "Kaeppel's Corner" at Optionetics.com, conducts online seminars, and contributes material to new trading courses. He is the author of Seasonal Stock Market Trends *(2010, John Wiley & Sons). He may be reached via the discussion boards at Optionetics.com.*

SUGGESTED READING

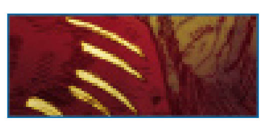
Gopalakrishnan, Jayanthi, and Bruce R. Faber [2009]. "Jay Kaeppel On Trading Futures And Options And Gold And Sectors," interview, *Technical Analysis of* STOCKS & COMMODITIES, Volume 27: November.

Kaeppel, Jay [2010]. *Seasonal Stock Market Trends*, John Wiley & Sons.

_____ [2001]. *The Four Biggest Mistakes In Futures Trading*, Traders Library.

‡Microsoft Excel

See our Traders' Tips section beginning on page 63 for commentary on implementation of Jay Kaeppel's technique in various technical analysis programs. Accompanying program code can be found in the Traders' Tips area at Traders.com.



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