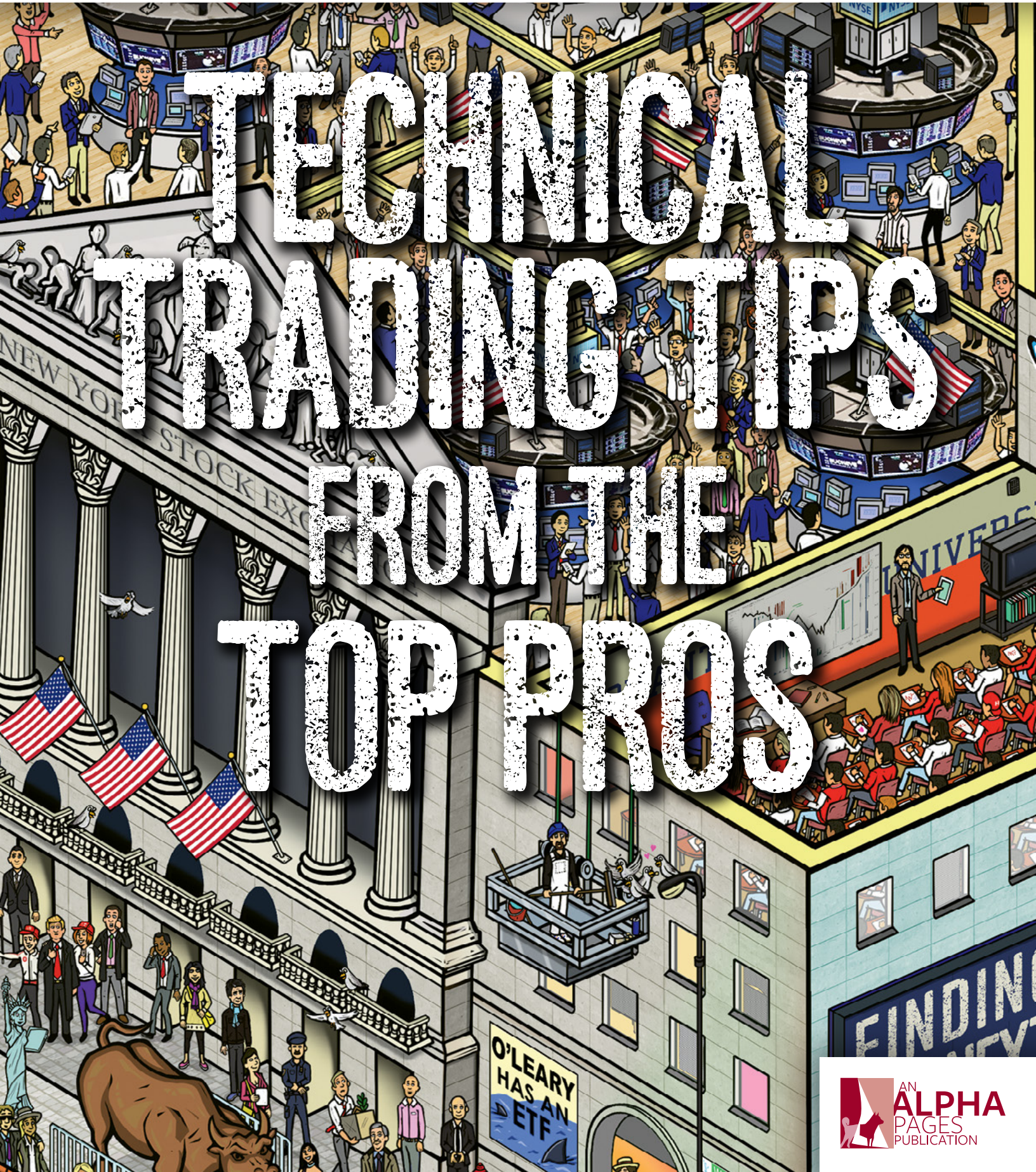
MODERN TRADER



TECHNICAL TRADING TIPS FROM THE TOP PROS

AN ALPHA PAGES PUBLICATION

ABOUT

Technical Trading Tips from the Top Pros

Over the last several years technical trading strategies have moved out of the shadows and into the mainstream. *Modern Trader* magazine (and *Futures* before that) have been teaching traders how to use various technical and cyclical strategies to earn solid returns for more than four decades. In fact, some of the most widely used indicators were introduced in the pages of *Futures*. This collection of articles provides readers with the basics on various technical based indicators.

The history of *Modern Trader* paralleled the growth of both financial futures and managed futures. The early practitioners of trend following road the growth of the personal computer, which allowed them to easily back test price data and create indicators that aided in the creation of systematic trading strategies.

Futures and *Modern Trader* has educated traders on these new techniques as well as the more well-worn methods of Gann and Elliott. Here we provide a primer on some of these techniques.

DANIEL P. COLLINS,
MT EDITOR-IN-CHIEF

Editor-in-Chief of *Modern Trader* magazine, Daniel P. Collins is a 25-year veteran of the futures industry having worked on the trading floors of both the *Chicago Board of Trade* and *Chicago Mercantile Exchange*. Dan originally joined *Futures* magazine in 2001. In 2013 Collins was named Editor-in-Chief and navigated the publication through the introduction of *Modern Trader* in 2015. His incisive reporting and no-holds barred commentary places him among the most recognized national media figures covering futures, derivatives trading and alternative investments.

Table of Contents

What Gann's Square-of-9 means for the Nasdaq 100

BY PAULINE NOVAK-REICH

The complementary relationship between Ralph Nelson Elliott's Wave Principle and the Gann Square-of-9 proposes an imminent trend reversal of the Nasdaq 100 Index. Though two different predictive tools, natural laws link them to the spiral of the Milky Way.

WHAT ELLIOTT WAVE SHOWS

Elliott's Wave Principle comprises of a repetitive eight-wave pattern that dominates the phases of bull and bear markets. It focuses on the mass psychology of participants as they swing from pessimism to optimism and back. Five waves of advance dominate the market's buoyancy stages, whereas the shorter despondency phase is governed by the three remaining swings (Figure 1, below). This ever changing investor psychology is reflected in the financial markets' daily records in the form of price movements, volumes of trades and investor sentiment indices. Upon establishing the location of a stock, or Index, within the Elliott cycle, the pattern tracks its transition from evolution to progression to decay. "Man is subject to the laws of physics and chemistry that govern biological processes on earth, and that these laws are determined by the orbits of the planets. Our physical brain follows the laws of science in determining human actions and not some agency that exists outside those laws" write Stephen Hawking and Leonard Mlodinov in *The Grand Design* published in 2010.

As the cycle begins to unfold, Waves I, III and V of the bull phase form long impulses corrected by the short retracements of waves II and IV. As a rule, corrective wave II does not fall below Wave's I trough, and Wave IV does not fall below Wave's I peak. Likewise, no corrective bull or bear market wave exceeds the span of its adjacent impulse swing. Impulse Waves I, III, V. A and C have longer durations than their corrective counterparts (see Figure 2 "Unlocking the secrets of Gann: Will the market crash in August?" futuresmag.com)

As the market changes direction, the pattern reverses. Downward trending waves A and C turn long, while upward Wave B – the only upswing of the bear market, turns short.

When corrective Wave II unfolds in a complex sideway pattern, of three lesser degree swings, corrective Wave IV manifests a sharp steep decline which typically brings down Waves' I and III advance of by 50%. Elliott refers to the relation of corrective Wave II style to Wave IV style as "alternation of form" given often Wave II manifests a sharp decline and Wave IV zigzags sideways. Above all, the pattern demonstrates that the up and down swings of the cycle adhere to the boundaries of a spiral. As the market moves up and down, its peaks and troughs correspond to the Golden Mean 0.618 and 0.382% proportions (also known as Fibonacci), and their derivatives 14.6 – 23.6 – 50 – 76.4 and 85.4% (Figures 1 & 2).

Metaphorically, the 'Wave Principle' is a road map for the analyst to negotiate the market's alleys, streets and freeways. Once the market's position within the pattern is clear, then the way ahead shows the direction of the next swing. The Nasdaq 100 Index at present is at the cusp of bear market Wave 'B'.

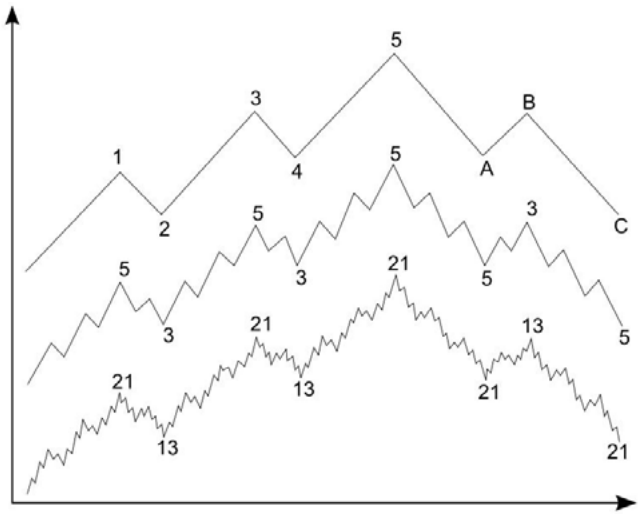
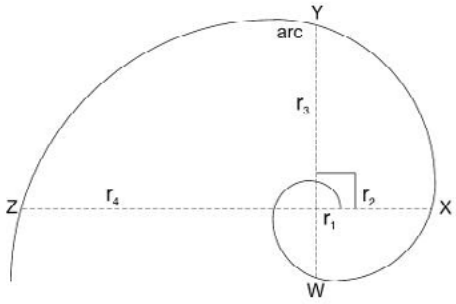


Figure 1 – Elliott's cyclic model of five-wave advance and an A-B-C decline which subdivides into lesser degree cycles, the smaller of which these constitutes 144 swings.



$$\frac{r_2}{r_1} = \frac{r_3}{r_2} = \frac{r_4}{r_3} = \ldots = \frac{r_n}{r_{n-1}} = 1.618$$

Figure 2 - Elliott's cyclical expansion and contraction model adheres to a logarithmic spiral.

ANCIENT USE OF GANN' S SQUARE -OF-9 PLAY OUT?

Next to the zodiac, the Square-of-9 was the world's first measuring instrument. In ancient times, it tracked and forecasted the spans of seasonal inundations. For over 3,000 years, two adjacent time intervals, aligned on a Square, projected the behaviour of Babylon's and Egypt's rivers. A series of longer than usual flood-spans signalled a catastrophic swell, whereas abnormally short intervals spelled drought. The great 40 days and 40 nights flood related in the Genesis legend of Noah is almost certainly an allusion to the Square, given that Noah embarked upon building the Ark well ahead of the flood.

The scientific transition from the 19th century to the 20th century was, by and large, dominated by Einstein, who sought to reconcile theory and experiment by unifying natural processes under one universal law. His Special Relativity Theory was a hot topic of discussion at the very time that Gann was on his quest to unravel the Holy Grail of markets. Gann was counting, measuring, and practising with hexagons and Squares of 6, 9 and 12 to identify the optimal geometrical swing/time relation at the instance equity changes its course. Yet, none of his records show any reference to Einstein and Elliott, the first famous the Relativity Theory, and the latter for his study of growth and decay cycles of the American stock market. *Elliott's book Nature's Law - The Secret of the Universe* appeared in 1937.

Ellioticians and Gann analysts, who traditionally rely on equity values to project markets' trends, need to be aware that this article focuses on interval duration rather than price ranges. This is because coordinate X of time progresses steadily forward and is void of coordinate's Y volatility. Price (Y) is an integral function of time (X), as is time of price. Likewise, the terms 'short' and 'long' in this article refer to spans rather than to 'buy long' and 'sell short' orders.

Given that the Elliott pattern unfolds over various phases of the economy, each phase is dominated by different economic fundamentals. Each therefore becomes subject to its own, and often complex, rules. Wave I forms the cycle's visionary phase as it emerges from the doldrums of a preceding bear market. The breadth of Wave III demonstrates a lengthy expansion and growth, whereas decadence and decay accompanied by skyrocketing stock values distinguish the final stages of Wave V. The bear market's 'A-B-C' correction is the cycle's vacuum cleaner. As it drags equity values back to realistic levels, it roots out corruption and restores transparency and trust. The final stages of bear market's Wave C pave the way for visionary Wave I of a new cycle to emerge.

The Nasdaq's advance from its 1985 low to the 2000 dotcom peak corresponds with Elliott's definition of bull market Wave V. After 15 years of uninterrupted growth, heavily overpriced dotcom stocks plummeted almost to the levels from which they took off.

The 2000 – 2003 Wave A's decline was the first leg of an 'A-B-C' bear market, still underway. Wave B, now in its topping stages, has dominated the advance of 2003 -2013. Bear market Wave C is due next (Figure 3).

Bull market Wave V, which measured 5442 calendar days (cd), and the corrective 902cd Wave A that followed, culminated approximately at the 6.18% Golden Mean ratio (5442 /902cd =6.03 ~ 6.18). Likewise, the 5442cd span of Wave V, and the combined Waves 'A - B' 2623cd duration (902 + 1721) – in itself, bordering on the Golden Mean value of 2618 (1.6182) – formed a 50% advance/decline ratio (5442 / 2623 = 2.07).

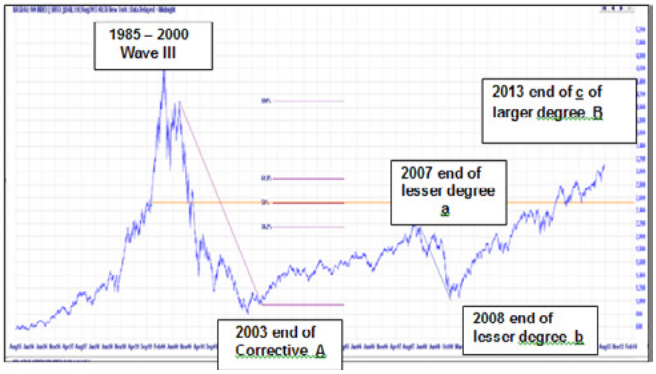


Figure 3 – The Golden Mean 38.2, 50, and 61.8% support/resistance levels of the Nasdaq 100 Index

The Nasdaq's Wave B can be identified by the three lesser-degree wavelets, 'a-b-c', which in contrast to the 1985 – 2000 sharp upward impulse, and the 2000-2003 steep decline, formed a scrambled zigzag pattern from beginning to end (Figure 3, above).

What stands out most is that on Aug. 10, 2013 wavelet c was equal to a's span, each 1721cd long (Figure 4, below). The number 1721 approximates the numeral 1723 on the Square's south-western diagonal (Figures 4 & 5).Since wavelet 'a' fell 2cd short of 1723, 'c' could run for a few more days without upsetting the balance. It may well terminate around August 16, 2013, in line with the S&P500 Index.

Pricewise, wavelet 'a' gained 1,111 points, whereas 'c', based on the highest closing price of 3,141.00, has, thus far, added 2,115. In the unlikely event of 'c' gaining 107 more points, by reaching the 3248.00 level, their price ratio will be 1:2 (1111/2222).

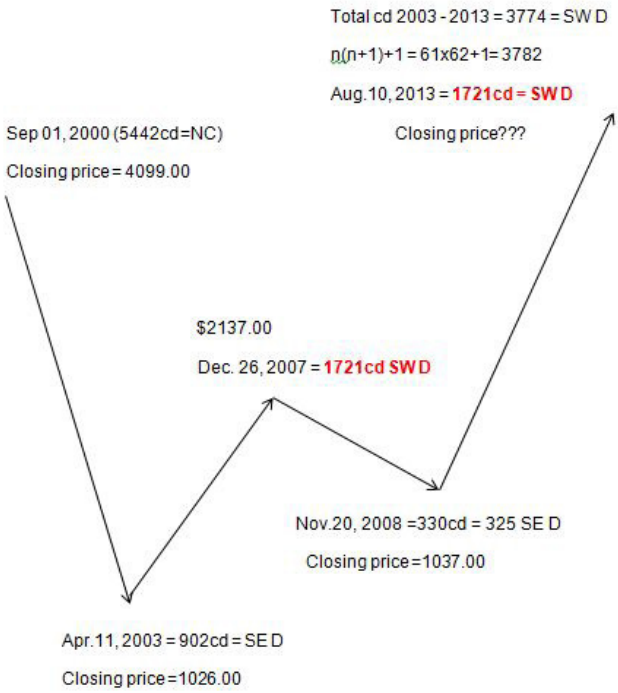


Figure 4

The top right corner of Figure 4 shows the formula n(n+1)+1 for determining the numerals of the Square's south-western diagonal [where 'n' is a whole number integer representing the square root of the span (√3774=61.4; 61 x 62 +1=3782)]. Note that the square root 61.4 approximates 61.8. At 3774cd, the numeral is too large to fit A4 page.

As stated in "Unlocking the secrets of Gann: Will the market crash in August?" mature intervals bounce off and culminate on the same Square axis upon completing a 360° rotation from and back to the same point where the preceding interval ended. In cases when a swing terminates upon the Square's opposite axis, at 180° angle, it remains incomplete until a 360° rotation brings it to the axis it bounced off. Having said all that, none of this applies to the Nasdaq100 Index. It behaves differently.

Save for the first swing (Oct. 9, 1985 –Sep. 2, 2000), which terminated upon the northern cardinal, on day 5442 of the run, the other components have thus far adhered to the Square's south-eastern and south-western diagonals, all terminating at a 90° angle (Figures 5, 6 & 7, below).

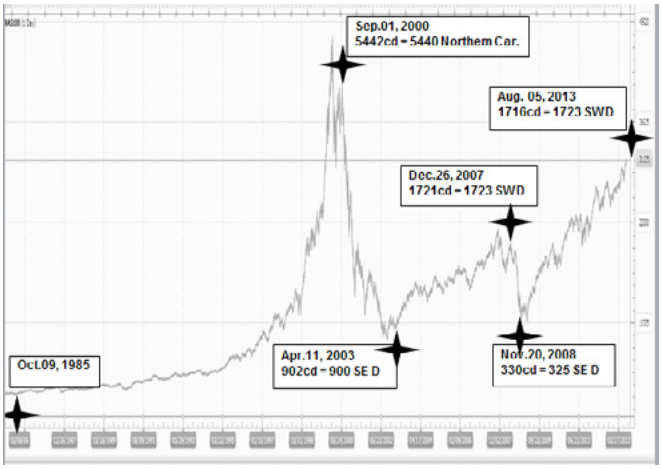


Figure 5

The axis of the 1985 – 2000 swing, which measured 5441cd (also too large to display) can be derived from the formula n(n+1)+n/2+1, where 'n' is the square root of the span: √5442 = 73.77 (73 x 74 + 37 +1= 5440.).

- Sep. 01, 2000 – Apr. 11, 2003 = 901cd = SE Diagonal (Fig.7)
- Apr. 11, 2003 – Dec. 26, 2007 = 1721cd = 1723 SW Diagonal (Fig. 6)
- Dec. 26, 2007 – Nov. 20, 2008 = 330cd = 325 SE Diagonal (Fig.7)
- Nov. 20, 2008 – Aug. 10, 2013 = 1721cd = SW Diagonal (Fig. 6)

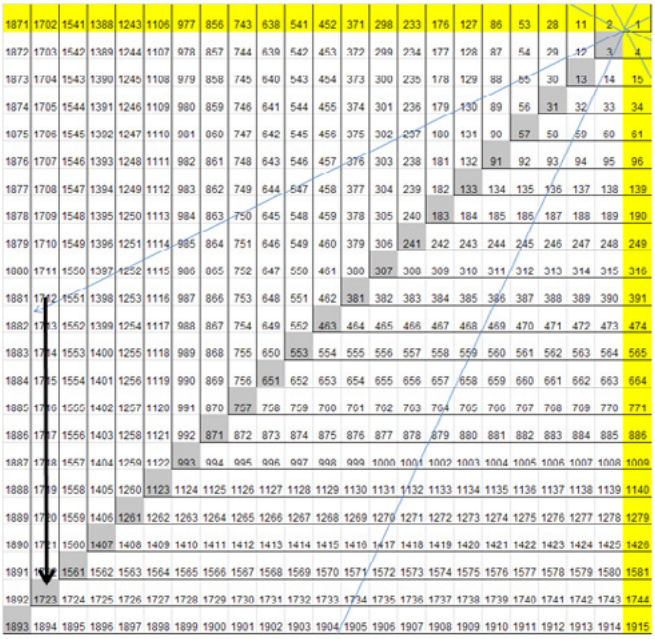


Figure 6 – South-western Diagonal

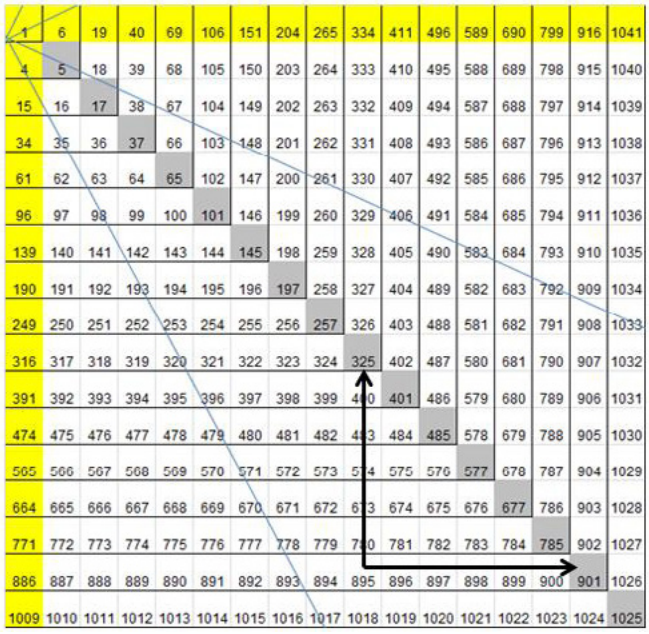


Figure 7 South-eastern Diagonal

Yet, despite of the Nasdaqs 'misbehaviour', a 360° alignment between lesser degree wavelet 'c' and the entire 3774cd 'a-'b-c' span (1721 + 330 + 1721) will take place on Aug. 10, 2013, upon the Square's south-western diagonal signalling the termination of Wave B and the beginning of Wave C's final decline (Figures 5 & 6).

While the 2000–2003 Wave A and 2002–2013 Wave B will form a 90° angle on August 10 on the south-eastern and south-western diagonals, the upcoming Wave C must terminate upon the Square's northern cardinal, at a 3600 angle with bull market's Wave V (Figures 5).

Gann often reiterated the importance of correct starting points. On pages 77-78 of *The Tunnel Thru the Air* he wrote: "It is just as easy to figure 100 or 1000 years in the future as one or two years ahead, if you have the correct starting point and know the cycle which is going to be repeated…In order to forecast future cycles, the most important thing is to begin right, for if we have the right beginning, we will get the right ending."

Correctly detected peaks and troughs map onto the Gann Square like the pieces of a puzzle. It takes little effort to identify the NASDAQ's Oct.09, 1985 trough, which, as Figure 5 shows, coincided with the lowest price the Index had reached. However, the respective Sept. 1, 2000 peak and April 11, 2003 trough are less visible on charts. Neither one coincided with the extremities of price (Figure 8).

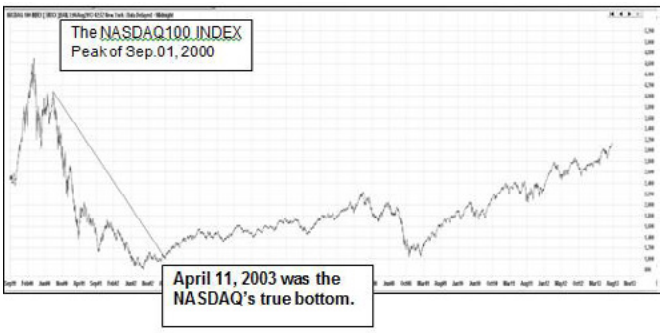


Figure 8 –The NASDAQ's 2000 peak and 2003 trough (weekly chart)

Absolute peaks and troughs are determined by lesser-degree wavelets that form the final stages of impulse swings. Even though pricewise the Nasdaq peaked on March 27, 2000, timewise, it was a false top given the 57cd decline and 71cd advance that followed. The longer swing, irrespective of price, determines the trend (Figure 9).

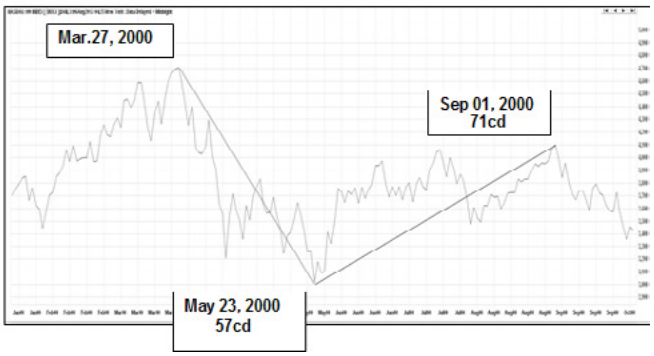


Figure 9

Similarly, between Oct. 10, 2002 and April 11, 2003, the Index's decline was longer in comparison to the upswing. Though, pricewise, the April 2003 low was considerably higher than the October 2002 bottom, the 53cd up and 161cd down intervals dictated that Sept. 1, 2000 was the true peak (Figure 10).

Figure 10

Stephen Hawking and Leonard Mlodinov's forecasting model "is good if it is elegant, contains few arbitrary or adjustable elements, agrees with or explains existing observations and makes detailed predictions about the future which can disprove or falsify it if they are not borne out.".

If there is one weakness to the Gann Square, it is the unknown number of 360° rotations a market undergoes over the life of an eight-wave cycle. The S&P500 Index, for example, completed nine 360° rotations over 1621cd (March 09, 2009 – Aug. 16, 2013) from the time Wave A ended on day 496cd of the run (Figure 11). How can we know that this 9th rotation was its last?

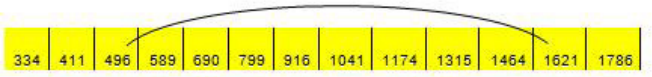


Figure 11- S&P 500's 9 360° rotations upon the eastern cardinal

The Nasdaq 100 Index, on the other hand, completed only 5.75 rotations from the day Wave A's 902cd run culminated on April, 11, 2003 (Figures 6 & 7). The bell, indeed, rings when the Square isolates an individual span and maps it onto its geometrical divisions, yet remains silent when a five-wave pattern terminates. Δ

Pauline Novak-Reich is the former manager research-foreign exchange at the ANZ's (Australian & New Zealand Banking Corp.) dealing room from 1980 -1993. Her duties involved analysis and forecast of currencies, interest rates, equities and commodity markets trends, as well as overseeing dealers' intraday trading. In 2005 she authored The Bell Does Ring (John Wiley, Australia).

The absolute benefits of relative strength

BY BRAMESH BHANDARI

The relative strength index (RSI) measures the speed and change of price movements and helps identify overbought and oversold conditions that you can exploit. It compares the magnitude of recent gains to recent losses to gauge the price momentum of financial assets, including stocks, commodities and financials. Traders can use RSI to generate trade signals, assess sentiment or as a complement to other analysis tools.

The RSI is a short- to intermediate-term indicator when used according to its classic application, which is most typically a 14-day time frame. It generates values that fall on a scale from 0 to 100, with high and low levels (overbought/oversold) considered to be at 70 and 30, respectively.

The RSI was developed by J. Welles Wilder and was first published in the June 1978 issue of Commodities (now *Modern Trader* magazine) and later that year in Wilder's book, New Concepts in Technical Trading Systems.

INTERPRETATION

When Wilder introduced the RSI, he recommended the 14-day time frame. That input value has remained popular, but since then both the nine- and 25-day RSIs have also gained popularity. You can vary the number of time periods in the RSI calculation — which is available for free on most charting packages — so you can experiment to find the period that works best for you. The RSI is a price-following oscillator (see "Analyzing Apple," left).

The RSI is a fairly simple formula. It is:

RSI = 100 – (100 / (1 + RS))

RS = Average gain / Average loss

The first step to understanding the RSI formula is grasping the RS input. It is the ratio of the average "Up" move over the period to the average loss over the period. Note that these are the averages of the absolute values. In other words, we sum all the losses (expressed as positive values) over 14 periods and divide that total by 14. We sum all the gains over 14 periods and also divide

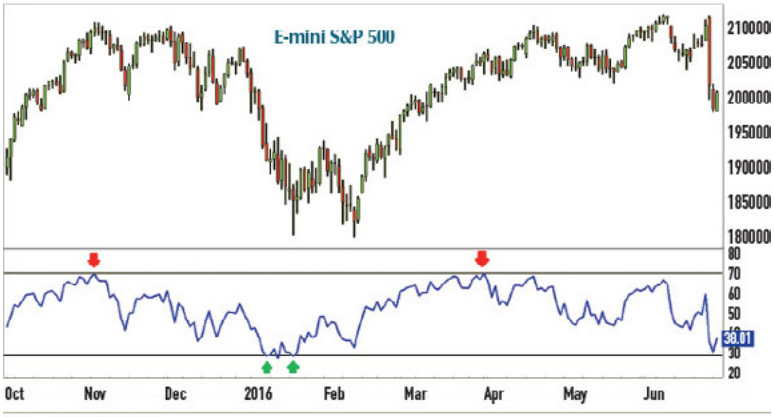
ANALYZING APPLE

The 14-period RSI demonstrates some relatively reliable sentiment analysis on Apple here. It bottoms prior to recoveries and tops out before the market dips.

Source: StockCharts.com

NOT SO FAST

Here, we can see how acting too quickly on an overbought or oversold reading can catch a trader on the wrong side of the market. During strong trends, these readings occur early and persist for some time.



Source: StockCharts.com

EYES ON CENTER

In addition to overbought and oversold levels, the center line is a key level for the RSI. Successful crossing of this line, or a failure to do so, can say a lot about the market's underlying sentiment.

Source: StockCharts.com

that total by 14. We then divide the average gain by the average loss to determine RS.

There is a slight variation in how the averages are calculated going forward. The difference in execution is slight, but it's worth noting.

The initial calculations for average gain and average loss are simple 14-period averages.

- First average gain = Sum of gains during the past 14 periods / 14.
- First average loss = Sum of losses over the past 14 periods / 14.

The second, and subsequent, calculations are based on the prior averages and the current gain loss:

- Average gain = [(Previous average gain) x 13 + Current gain] / 14.
- Average loss = [(Previous average loss) x 13 + Current loss] / 14.

Taking the prior value plus the current value is a smoothing technique similar to that used in exponential moving average calculations.

TRADING SIGNALS

The point of the RSI, from an analytical perspective, is to determine when a tradeable assest has traded "too far" in one direction. In other words, it's intended to identify a potentially overbought or oversold security.

Another way to describe overbought and oversold levels is to identify them as unsustainable price extremes. The traditional interpretation is that an RSI above 70 is considered overbought and an RSI below 30 is considered oversold.

Don't misinterpret these hard numbers as hard and fast rules for trading. As the saying goes, an overbought market can remain overbought for an extended period, and someone who reacts to an overbought (or oversold) signal too early can suffer substantial losses as time goes by.

Strong trends can present a problem for these classic overbought and oversold levels. RSI can become overbought (>70) and prices can simply continue higher when the uptrend is strong. Conversely, RSI can become oversold (<30) and prices can simply continue lower when the downtrend is strong.

In "Not so fast" (above) we show the S&P 500 with a 14-day RSI on a daily time frame. Working from left to right, the S&P 500 became overbought, as measured by the RSI, in early November around 2100. The S&P 500 index did not top out as soon as the overbought reading appeared. Instead, it took two to three days, but then we saw a fall of almost 100 points.

From overbought levels, the RSI moved to below 30 in mid-January to become oversold. Despite this oversold reading, the S&P 500 continued to decline and a final bottom was not made until Jan. 20. In both cases the RSI did signal a change in direction. However, in later March the RSI ticked above 70 briefly and continued higher.

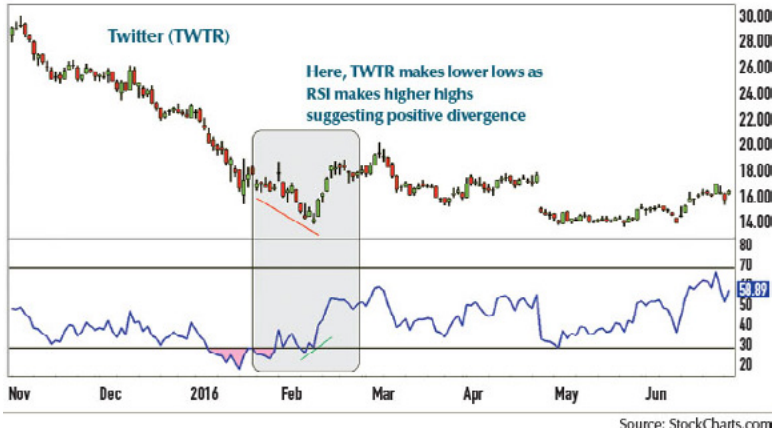
Traders should always use readings from the RSI indicator with other indicators, such as price action, price patterns or other technical indicators before determining a signal. On Jan. 20, a hammer candlestick was formed with the RSI in oversold territory, confirming a short-term bottom was in place.

The S&P 500 again revisited that level on Feb. 11, but the RSI was not oversold. This registered as divergence, and the market followed as expected, rallying more than 10% from the low of 1810.

The RSI can also be used as a sentiment indicator rather than a generator of hard trading signals. In this way, it can identify bullish and bearish shifts in the market by noting when the RSI line crosses above or below its center line. This interpretation

CROSSING PATHS

Price and the indicator don't always agree. When this happens, we call it "divergence" and look for signs that price might reverse its current trend.



Source: StockCharts.com

can also be flipped on its head: When the RSI repeatedly fails to cross the center line despite price action, that price action might be based on weak hands.

As shown in "Eyes on center" (page 10) on Nov. 12, RSI bounced off 50 and Citigroup had a small rally. However, once the center line was broken, the stock initiated a major decline. A rally attempted to form, but this time the center line demonstrated significant resistance and the market was sold again.

Divergence describes when price action and the oscillator indicate conflicting information. These conflicts are often interpreted as an impending signal that price will give up and reverse trend.

Bullish RSI divergence refers to a situation when RSI becomes oversold, surges out of oversold territory and holds above it while price pulls back. In general terms, bullish divergence forms when prices move to a lower low, but the indicator forms a higher low to suggest improving money flow or momentum. Bearish divergence is simply the opposite, when price makes a new high but RSI registers a lower high.

As seen in "Crossing paths" (left) **Twitter** (TWTR) made a lower low while RSI went into oversold territory, moved higher and registered a higher high while price kept dipping. Once RSI moved above 20 and we had a bullish engulfing pattern, it was clear a reversal was imminent. Price rallied to $21.

TIME TESTED

Unlike many other indicators, the RSI has stood the test of time. It remains one of the most popular indicators used by technical analysts and traders. Its strengths are its ability to identify potential reversals with overbought/oversold levels and bullish/bearish divergences. As with all indicators, the RSI should not be used by itself. Price action pattern analysis should be consulted to confirm RSI signals and to better time trade entries. Δ

Bramesh Bhandari is a proficient trader on the Indian stock market. He analyzes forex, commodity and world indexes, and also provides online tutoring on technical analysis to traders.

Trading with the Money Flow Index

BY BRAMESH BHANDARI

The Money Flow Index (MFI) is a momentum indicator that measures the strength of money flowing into and out of a security. It uses both price and volume to measure buying and selling pressure. This information can then inform the trader on when to enter or exit a position in the security being analyzed.

Created by Gene Quong and Avrum Soudack, the MFI is related to the relative strength index (RSI), but where the RSI only incorporates price in its calculation, the MFI accounts for volume.

The MFI starts with the typical price for each period. Money flow is positive when the typical price rises, indicating buying pressure, and negative when the typical price declines, indicating selling pressure. A ratio of positive and negative money flow is then plugged into an RSI formula to create an oscillator that moves between 0 and 100.

As a momentum oscillator tied to volume, the MFI is best suited to identify reversals and price extremes with a variety of signals. "Apple momentum" (left) shows **Apple** (AAPL) stock along with the MFI indicator.

APPLE MOMENTUM

The MFI reflects both price momentum and volume trends. Traders can use a number of methods to glean signals from the indicator, including keeping an eye out for simple extreme values.

Source: eSignal

CALCULATION

The MFI requires a series of calculations. First, the period's typical price is calculated. This is the average of the high, low and close:

Typical Price = (High + Low + Close)/3

Next, raw money flow (not the MFI) is calculated by multiplying the period's typical price by the volume:

Raw Money Flow = Typical Price x Volume

If the day's typical price is greater than the previous day's typical price, then money flow is considered positive. Positive money flow is the sum of the positive money over the specified number of periods. If the current day's price is less than the previous day's price, the money flow is considered negative. Negative money flow is the sum of

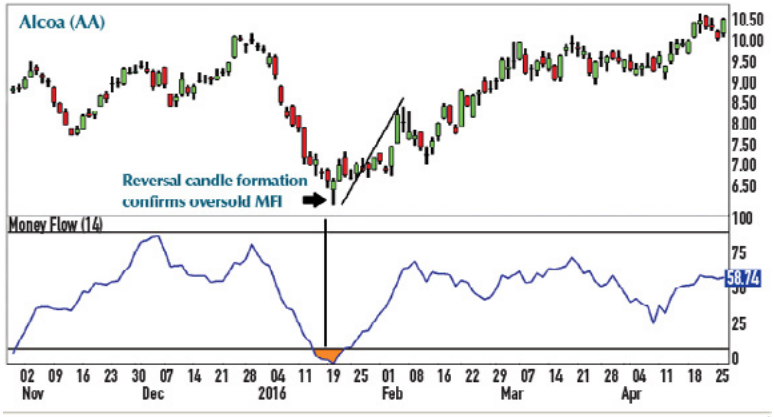
TOO HIGH, TOO LONG

The MFI alerted traders that IBM was extremely overbought just prior to it topping on April 1.

Source: eSignal

AA REBOUND

Alcoa charged higher in early January after the MFI reached oversold levels and a reversal candlestick pattern confirmed the trend change.



Source: eSignal

the negative money over the specified number of periods. The money ratio is then calculated by dividing the positive money flow by the negative money flow over a specified period of time; generally, 14 is used as a default period.

Money Flow Ratio = (14-period Positive Money Flow) / (14-period Negative Money Flow)

Finally, the MFI is calculated using the money ratio:

Money Flow Index = 100 - 100 / (1 + Money Flow Ratio)

INTERPRETATION

The MFI's calculation generates a value that is then plotted as a line that moves within a range of 0 to 100, making it an oscillator. When the MFI rises, this indicates an increase in buying pressure. When it falls, this indicates an increase in selling pressure. The MFI can generate several signals, most notably overbought and oversold conditions and divergences (positive and negative).

The interpretation of the MFI is as follows:

- Overbought/oversold readings: Look for market tops to occur when the MFI is above 90. Look for market bottoms to occur when the MFI is below 10.
- Divergence between the indicator and price action: If the price trends higher and the MFI trends lower (or vice versa), a reversal may be imminent.

OVERBOUGHT/OVERSOLD

Overbought and oversold levels can be used to identify unsustainable price extremes. An MFI reading above 90 is considered overbought, while an MFI below 10 is considered oversold.

Be wary of trading these levels blindly. As the warning goes, an overbought market can remain overbought for an extended period. Strong trends can present a problem for these classic overbought and oversold levels. The MFI can become overbought, and prices can simply continue higher when the uptrend is strong. Conversely, the MFI can become oversold, and prices can simply continue lower when the downtrend persists. The same goes for oversold markets. Like the RSI, this indicator is best used in conjunction with another indicator as confirmation.

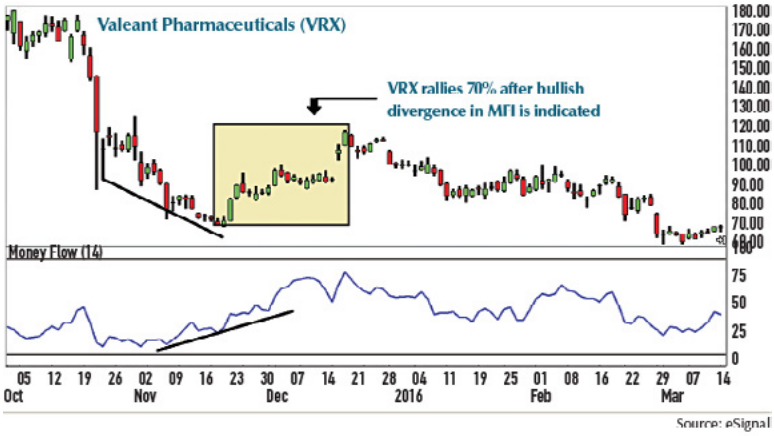
Originally, the levels 80 and 20 were used for overbought and oversold readings. Quong and Soudack recommended expanding these extremes to further qualify signals. A move above 90 is considered truly overbought and a move below 10 is considered truly oversold. Moves above 90 and below 10 are rare occurrences that suggest a price move is unsustainable.

For example, in "Too high, too long" (top), IBM is shown to have been in a strong uptrend from Feb. 11, 2016, where it made a low of $116.90 and has been rallying to a high of $153.50 on Apr. 4. On Apr. 1, the MFI touched 91.7. This level is considered not sustainable, and if we get a confirmation from a reversal candlestick, it makes a case for short selling.

On April 4, IBM made a gravestone doji candlestick, which is a reversal pattern. This confirms that shorts could be taken around $152 with a stop loss of $154, for a 5% to 6% down move, or until the MFI reaches 50, at which point a partial profit taking trade could be done with the remaining position being carried forward with a trailing stop. As of Apr 11, IBM had made a low of $147, almost 3.5% down from the short

MIXED SIGNALS

Here, price was telling us one thing, while the MFI was telling us another. Despite lower stock prices, the indicator suggested money was flowing into the market. That ultimately resulted in higher prices.



Source: eSignal

trigger level of $152.

An oversold reading works the same way, just on the other end of the extreme. **Alcoa Inc.** (AA) had been in a strong downtrend from Dec. 29, 2015, when it made a high of $10.23. By Jan. 20, 2016, it reached a low of $6.11. As shown on "AA rebound" (page 14), on Jan. 20 the MFI reached a scant 0.92. This level is not sustainable, and if we get a confirmation from a reversal candlestick pattern, it makes a case for going long AA.

We got our signal that very day as AA formed a hammer candlestick pattern. Longs could have been taken around $6.60 with a stop loss at $6 for a 5% to 6% move or until MFI reaches 50, at which point partial profits can be taken. AA made a high of $8.45 on Feb. 4, 2016, when the MFI reached 50.

DIVERGENCES

MFI divergence describes the scenario where price action and the MFI indicator provide different signals. This difference in signal can be interpreted as an impending reversal in price. Divergences can be both bearish and bullish.

A bullish MFI divergence is where the indicator drops below 20 and then surges above 20, holding that level and then breaking higher than the prior reaction high. The divergence comes when the price action makes a lower low while the indicator performs this recovery action.

A bearish MFI divergence is simply when price and the indicator react in an opposite manner: Price makes a new high, but the MFI makes a new low.

On the **Valeant Pharmaceuticals International Inc.** (VRX) chart (see "Mixed signals," left), a bullish divergence can be seen when price makes lower lows in October to November 2015, but the MFI makes higher highs. Subsequently, the stock's price rallied from a low of $69 on Nov. 18 to $119 until the MFI became slightly overbought, touching the $80 level.

The MFI is a rather unique indicator that combines momentum and volume with an RSI formula. Because of its incorporation of volume, the MFI is better suited to identify potential reversals using both overbought/oversold levels and bullish/bearish divergences. As with all indicators, the MFI should not be used by itself. A pure momentum oscillator, such as RSI, or pattern analysis can be combined with the MFI to increase signal accuracy. Δ

Bramesh Bhandari is a proficient trader on the Indian stock market. He analyzes forex, commodity and world indexes, and also provides online tutoring on technical analysis to traders.

Rules for bottom fishers

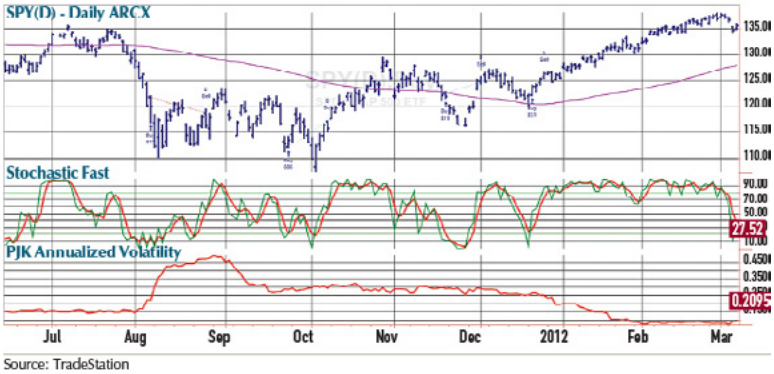
BY PERRY KAUFMAN

Wouldn't we all like to know that today is the bottom of a sharp sell-off, so we can buy at just the right time? Some would say that's trying to catch a falling knife, and certainly there is significant risk in a volatile market that's been collapsing. But then risk is relative to reward, and if the reward is big enough, the risk can be worth it.

"A short-term strategy based on volume" (January 2016) discusses using volume spikes to identify turning points. That's a classic concept. Now we will take two simple concepts: Annualized volatility and the stochastic indicator, to determine when to buy a bottom. Understand that nothing is foolproof, but this combines two basic ideas and has all the indications of working across a wide selection of index markets.

CATCHING BOTTOMS

This price action in the SPDR shows multiple trading signals in 2010.



Source: TradeStation

THE CALCULATIONS

There are only three calculations needed for this method:

1. Annualized volatility taken over the past 20 days, the same calculation period used for options volatility:

AV = standard deviation (returns, 20) x square root (252)

(Be sure that you use the returns, not the price. Returns are: Close(today)/Close(yesterday) – 1.)

2. Stochastic (an unsmoothed momentum calculation):

100*(Close(today) - Lowest(low,20))/
(Highest(high,20) - Lowest(low,20))

This indicator gives you the position of today's close within the high-low range of the past 20 days. It has values from 0 to 100.

3. A 100-day moving average to determine that prices are moving down.

THE CONCEPT

We're looking for a sharp sell-off to be a buyer. That's easily defined as a combination of downtrend, high volatility, and a low stochastic to indicate good timing. The entry will be mostly based on the volatility because the stochastic will probably be showing low values all the way down.

Once in a trade, we will exit if the volatility declines back to a normal level, or the stochastic rises reflecting a rally off the bottom. We don't want to be too demanding of the exit values because high volatility is also high risk. There is no stop-loss,

BROAD PROFITS

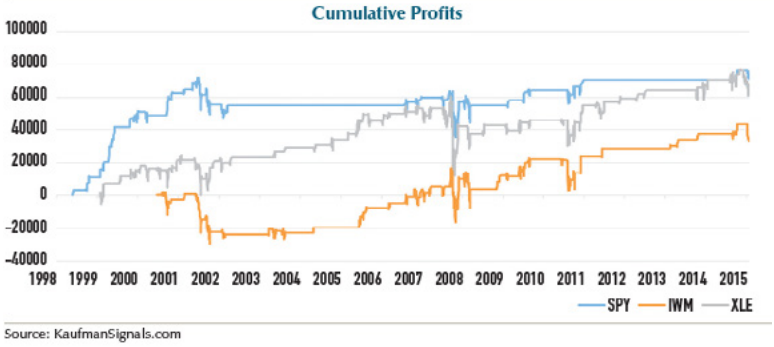
Although the annualized rate of return appears small, that must be judged with respect to the limited amount of time the strategy is exposed to market risk.

Data from 1998 or inception – Investment $100,000										
ETF	Symbol	Days Tested	Volatility Threshold	Profit	Profit Factor	Trades	%Prof Trades	Time In Market	AROR	If 100% in Market
NASDAQ	QQQ	3996	0.59	59422	29.50	9	89%	16.2%	2.98%	18.4%
Health Care x2	CURE	870	0.55	45713	--	4	100%	4.2%	11.41%	271.7%
Biotech X2	BIB	1167	0.44	76885	108.00	11	90%	9.3%	13.11%	140.9%
Gold Mining	GDX	2172	0.36	69984	2.12	31	71%	33.9%	6.35%	18.7%
Pharma	PPH	3766	0.27	33292	3.87	7	85%	7.5%	1.94%	25.9%
Energy	XLE	4036	0.23	91799	2.60	48	79%	16.9%	4.15%	24.6%
S&P 500	SPY	4293	0.19	76389	2.78	39	76%	8.9%	3.39%	38.1%
Russell	IWM	3666	0.16	50029	1.53	54	74%	13.9%	2.83%	20.3%
Financials	XLF	4037	0.15	116128	2.26	64	71%	13.7%	4.93%	36.0%
DJIA	DIA	4282	0.13	48834	1.58	63	69%	8.1%	2.37%	29.2%

Source: KaufmanSignals.com

PROFIT PICTURE

The cumulative equity growth lines (shown here for the ETFs SPY, IWM and XLE) depict the consistent growth of the strategy. The flat portions are when the strategy isn't holding a position.



Source: KaufmanSignals.com

so we want to be sure to get out.

THE RULES

This strategy needs three conditions to be met for an entry signal:

1. The closing price must be below the 100-day moving average to ensure a downtrend.
2. The annualized volatility must be greater than a threshold value to indicate high volatility and it must be rising.
3. The stochastic must be below a threshold value to be oversold.

Exit the trade if either of the following conditions occurs.

4. The annualized volatility falls below a threshold value. Declining volatility often indicates the end of a move.
5. The stochastic rises above a threshold value, indicating the price is no longer oversold.

"Catching bottoms" (page 16) shows the sector SPDR SPY at the top, along with the 100-day moving average. The stochastic is in the middle, and the annualized volatility in the bottom panel. The buy and sell signals are also shown at the top. The four entries occur when the annualized volatility is above 0.19 and the stochastic is below 15.

THE RESULTS

Applying techniques using volume and volatility to an index rather than an individual stock often works better. It shows that the event we are tracking is broad based and not a spike associated with single stock news, such as a scandal or an earnings surprise.

Whenever possible, we want to generalize the parameters; if we can apply the same values to many markets we consider the solution robust. For this method, we'll always use:

- Moving average of 100
- Stochastic period of 14
- Annualized volatility period of 20
- Stochastic oversold entry threshold of 15
- Stochastic exit threshold of 60
- Annualized volatility exit threshold of 5% (0.05)

The only value that changes will be the volatility entry level because volatility can vary for each market. The volatility exit level won't be important because most trades will exit when the stochastic rallies above 60; it responds much faster than the volatility.

"Broad profits" (above) gives a summary of selected ETF results. It is sorted by volatility entry threshold, highest to lowest. In general, the higher the threshold, the fewer trades. The Profit Factor is the gross profits divided by the gross losses, a measure of reward to risk. The annualized rate of return (AROR) is low because the time in the market is small. But then your exposure to risk is also small. The far right column shows what the returns would be if this method would have been in the market 100% of the time.

It is important to visualize the pattern of results, shown in "Profit picture" (below) for SPY, IWM, and XLE. SPY is far less active than either IWM or XLE and they all have a volatile period during 2008, even though the loss was recovered in very few days within a single trade.

COULD IT BE BETTER?

Of course we could optimize these rules, even find specific values for each parameter for each market. We might be able to remove the loss seen in 2008 in the equity chart. But then we would be fine-turning this to the past history of those markets, a method that has never turned out to be rewarding. The future just doesn't quite follow the patterns of the past, and no one market contains enough patterns to give us a robust solution for the unseen future. By finding one set of parameters that works across all markets, we have essentially used more data to arrive at one solution. The results are not as good as optimizing, but they are more realistic. Δ

Perry Kaufman is a financial engineer and trader. He is the author of "Trading Systems and Methods," and "A Guide to Developing a Successful Algorithmic Trading System."

Optimizing stops

BY ART COLLINS

One trading system has smaller average profits than losses and a greater number of wins. Another features bigger average profits and smaller but more numerous losses. Which will be the better system? To help decide, let's consider some extreme methodologies.

The Martingale system is designed to all but guarantee an ultimate winning bet. That we're now talking gambling rather than trading is irrelevant as the concept is applicable to both. The player starts with one unit. If the wager pays off, the next bet is the same basic unit. If it loses instead, the next bet is doubled. If that bet loses, it's redoubled to four units. If that loses, you bet eight, then 16 and so on. Wherever there's a win in the sequence, one unit profit is netted out and the next play reverts to the single unit.

The bets must all be of the same roughly 50-50 win chance variety, such as on the craps table's pass or don't pass lines. The driver is obvious — a single loss can happen at any time, but consecutive losses are more unlikely and a huge string of them is really improbable. The appeal is also clear — if you think in terms of sequences rather than individual bets, you will enjoy a string of one-unit profits. You will not lose.

Until you do. Maybe your bankroll only extended to a sixth loss? Or maybe your next double would exceed table limits? The strategy counts on many small wins, but the more expansive "many" becomes, the more likely the possibility of total ruin.

The "black swan," as such anomalies are now known, occurs more frequently than we might expect in the financial markets. We shouldn't be surprised when the mutation materializes in a sheer sea of trials. A normal statistical bell curve has skinny tails at both ends representing the unlikeliest events. One that reflects human emotion, probably the most plentiful element in the trading world, becomes skewed. The unlikely becomes more likely. The tails get fatter. It has been theorized that 9/11, Black Monday (Oct. 19, 1987) and the flash crash of 2010 should each occur maybe once every several thousand years. We saw at least three within a quarter century.

Martin Gladwell's book, "What the Dog Saw" includes a chapter recounting the fortunes of two huge traders with diametrically opposing strategies. Day after day, Nicholas Taleb watched his low probability long options expire worthless. It wasn't a surprise; the plan was to endure consistent losses during all the normal days to hit a huge windfall the one day the market got insanely wild. Taleb knew such days would arrive far more frequently than anyone could imagine. He could therefore accomplish what would be psychologically impossible for the rest of us — hang with a steadily eroding account to get mega wealthy when the black swan hit. Taleb placed tremendous value on the inevitability of a market shock.

Victor Niederhoffer did the opposite. He discounted the low (but not non-existent) risk of ruin that is an ever-present part of speculation, pretty much as we all do whenever we put on a position. He was in effect taking the other side of Taleb's trades, collecting small sums by shorting the ever deteriorating improbable options. Option traders know this as "picking up nickels in front of the steamroller." Lots of nickels — the trick is to never get flattened.

Niederhoffer got flattened. It was fall 1997, and a crisis in Asia caused a 69.5-point drop in S&P 500 futures. It was the very day Nicholas Taleb enjoyed an upside explosion in his account equity.

How does this relate to whether to use large or small stops? If

NO-STOP SYSTEM

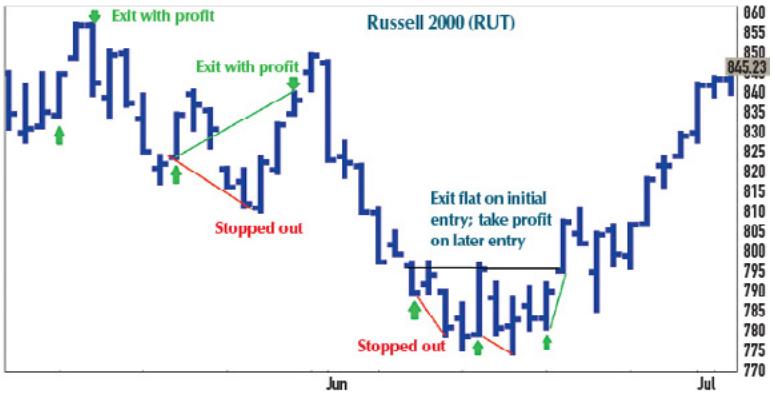
This intraday index system uses no stops and charges $5 per round turn for slippage and commission. Results are shown from Jan. 2, 2005, through Dec. 24, 2015.

Interday Index System With No Stops						
	NET PROFIT	TRADES	AVG TRADE	% PROFIT	MAX DD	ROA
S&P 500	$39,865	107	$372.57	56.07%	$6,180	645.06%
NASDAQ	$12,600	115	$109.57	45.22%	$5,275	238.86%
DOW	$25,490	106	$240.47	56.60%	$4,980	511.85%
RUSSELL	$83,610	116	$720.78	60.34%	$6,320	1322.94%
MIDCAP	$49,445	115	$429.96	56.52%	$10,850	455.71%

Source: TradeStation

FIXED STOPS

The green arrows show long entries and the original non-stop system exits. We marked where those original trades would have been stopped out with a maximum $1,000 money management stop.



Source: TradeStation

OPTIMIZED STOPS

While the net profit isn't necessarily the best measure of system success, we can see here that it can often improve with creative stop design.

	zzzzz z	Test	All: Net Profit	All: Gross Profit	All: Gross Loss	All: Total Trades	All: % Profitable	All: Winning Trades	All: Losing Trades	All: Avg Trade	All: Max Intraday Drawdown	All: Required Account Size	All: Return on Account
1	0.5	1	27,115.00	67,972.50	-40,857.50	142	37.32	53	89	190.95	-6,245.00	6,245.00	434.19
2	1.0	2	39,280.00	80,530.00	-41,250.00	119	49.58	59	60	330.08	-5,160.00	5,160.00	761.24
3	1.5	3	37,972.50	80,770.00	-42,797.50	113	53.98	61	52	336.04	-4,867.50	4,867.50	780.12
4	2.0	4	36,785.00	79,980.00	-43,195.00	108	54.63	59	49	340.60	-4,077.50	6,077.50	605.27
5	2.5	5	40,202.50	80,362.50	-40,160.00	107	56.07	60	47	375.72	-4,177.50	6,177.50	650.79
6	3.0	6	39,865.00	80,362.50	-40,497.50	107	56.07	60	47	372.57	-4,177.50	6,177.50	645.33
7	3.5	7	39,865.00	80,362.50	-40,497.50	107	56.07	60	47	372.57	-4,177.50	6,177.50	645.33
8	4.0	8	39,865.00	80,362.50	-40,497.50	107	56.07	60	47	372.57	-4,177.50	6,177.50	645.33
9	4.5	9	39,865.00	80,362.50	-40,497.50	107	56.07	60	47	372.57	-4,177.50	6,177.50	645.33
10	5.0	10	39,865.00	80,362.50	-40,497.50	107	56.07	60	47	372.57	-4,177.50	6,177.50	645.33

Source: TradeStation

you make it easier to take profits and harder to get stopped out, you're betting more on normal market behavior and downplaying the infrequent anomaly. If you make stops tight and hope that enough trades will survive and travel far in your direction, you're figuring outliers will occur more frequently rather than less.

The two-trader tale had a clear winner/loser outcome. Non-extreme trading isn't so lopsided. System development is a game of constant weighing and balancing; it is possible to make your stops too tight. Often, however, you can assume less risk without significantly hurting your bottom line.

"No-stop system" (left) shows a profitable interday mini index futures system that has no stops. The exits occur only when the condition is no longer met for staying long or short. Not unexpectedly, the makeup of the trades significantly changes when you impose an arbitrary stop as "Fixed stops" (left) demonstrates.

STOP EFFECT

You might expect that at the very least, the net profits would significantly shrink as stops are tightened. That's often not true. "Optimized stops" (below) shows the same system in the S&Ps with optimized stops ranging from $500 to $5,000 in $500 increments. (The left column numbers should be multiplied by 10,000 to produce the stop increments.) A $1,000 stop (second row) generates a bottom line a mere $580 less than the original stop-less system. Stops of $3,000 and higher have performance summaries identical to the original. With a $2,500 loss limit, your net equity would actually increase to $40,202.

The net profit isn't even the best performance criterion, however. If you instead optimize for return on account (far right column), you'll get performance in more relative terms — not only a profit projection, but what kind of pain you had to endure getting there during the worst period. The ROA divides the net profit by the worst drawdown. The resulting figure is a percentage your account would have increased had your startup been the drawdown amount. On the top line, your assumed startup capital would have been $6,245 and your ultimate $27,115 net profit would have represented a 434.19% increase (far right column).

Why is this a better statistic than merely knowing your profit? If you don't delve below the surface, a $100,000 profitable system is always going to appear better than one that produced $40,000 in the same period. But what if you knew that the former system had a $70,000 worst drawdown while the latter had an $8,000 one? You would have done better tripling your position size on the second system. You'd have superior results on both ends — a $120,000 vs. a $100,000 net profit, and a combined drawdown of only $24,000 vs. $70,000. Judging by return on account, your best result would have been the 780% increase stemming from a mere $1,500 stop.

NO STOPS VS. $1,000 STOPS

When we add flat $1,000 stops to our original system, we see ROAs generally increase.

Interday Index System With No Stops						
	NET PROFIT	TRADES	AVG TRADE	% PROFIT	MAX DD	ROA
S&P 500	$39,865	107	$372.57	56.07%	$6,180	645.06%
$1000 stop	$39,280	119	$330.08	49.58%	$4,730	830.44%
NASDAQ	$12,600	115	$109.57	45.22%	$5,275	238.86%
$1000 stop	$2,280	124	$18.39	41.94%	$5,425	42.03%
DOW	$25,490	115	$221.65	56.60%	$4,980	511.85%
$1000 stop	$25,260	115	$219.65	51.30%	$4,020	628.36%
RUSSELL	$83,610	116	$720.78	60.34%	$6,320	1322.94%
$1000 stop	$69,435	139	$499.53	49.64%	$5,305	1308.86%
MIDCAP	$49,445	115	$429.96	56.52%	$10,850	455.71%
$1000 stop	$55,120	160	$344.50	38.13%	$8,885	620.37%

Source: TradeStation

SIMPLE SYSTEM

This basic 15-minute system in the S&P 500 uses a $200 money management stop.

TradeStation Performance Summary (All trades)			
Total net profit	$26,670.00	Profit factor	1.06
Gross profit	$441,350.00	Gross loss	($414,680.00)
Total number of trades	2741	Percent profitable	23.71%
Winning trades	650	Losing trades	2086
Even trades	5		
Avg. trade net profit	$9.73	Ratio avg. win: avg. loss	3.42
Avg. winning trade	$679.00	Avg. losing trade	($198.79)
Largest winning trade	$3,230.00	Largest losing trade	($280.00)
Max. consecutive winning trades	6	Max. consecutive losing trades	35
Avg. bars in winning trades	25.53	Avg. bars in losing trades	4.15
Avg. bars in total trades	9.25		
Max. shares/contracts held	1	Account size required	$11,500.00
Return on initial capital	26.67%	Annual rate of return	2.16%
Return retracement ratio	0.10	RINA Index	(683.24)
Trading period	10 yrs, 11 mths, 18 days , 21 hrs, 45 mins	Percent of time in the market	5.97%
Max. equity run-up	$37,940.00		
Max. drawdown (intra-day peak to valley		Max. drawdown (trade close to trade close)	
Value	($12,510.00)	Value	($11,500.00)
Net Profit as % of drawdown	213.19%	Net profit as % of drawdown	231.91%

Source: TradeStation

The ROA figures alone demonstrate a robust system. Remember, they represent a percentage increase off an assumed worst drawdown startup. That's a 645% equity rise in the S&Ps, and a whopping 1,322% in the Russell. The least accommodating market more than doubled its money and the next to worst figure was a more than four-fold improvement. This isn't bad over an 11-year period.

But the ROA isn't the only formidable performance measure. Only one drawdown just barely exceeds $10,000. All but one has percentage profits over 50%. Average trades are all triple digit — most far into that realm. We've demonstrated that wide losses are not a necessary price to pay for impressive stats.

"No stops vs. $1,000 stops" (left) further illustrates this. The dual row sets are identical versions of the same system other than reporting no stops on the top lines and $1,000 stops on the bottom. Three out of the five markets barely gave up any net profit. While the Russell saw a 17% equity decrease, its ROA was almost totally unaffected. Three out of the five markets actually increased their ROAs.

THE ROLE OF STOPS

Charlie Wright, mechanical system fund manager and author, said in my book "Market Beaters" that his testing proved that, ultimately, "indicators don't matter." This flies in the face of where systems developers tend to focus. For them, the Holy Grail would be the discovery of the definitive entry signal. As Wright observed, however, markets only provide a finite range of potentially profitable entry points which is why, for example, trend-followers tend to enter and exit at similar levels regardless of signals. He maintained that any "edge" is derived from "the back end" of the trade — risk management.

Let's consider an extremely simple intraday system that shows a bias in 15-minute bars. At the end of the first bar, or 8:45 a.m. Central time, if the close is greater than the open, buy; if less than the open, go short. Use a $200 money management stop — if not hit, exit on the close. "Simple system" (left) shows the result in the mini midcap from the start of 2005 through Dec. 24, 2015. Each trade represents a single mini contract. For this education-only demonstration, no slippage/commission is deducted.

Intraday strategies often trigger off first bar activities, but is that really the magic driver here? The first chart in "Optimized results" (page 21) is an optimized study in the midcap. It shows how many 15-minute bars pass before entering in the direction relative to the daily open. The numerically sequenced far left columns correspond to a time of day between 8:45 a.m. and 11:00 a.m. One equals 8:45, two equals 9:00, three is 9:15, etc. Clearly a quick first bar entry is not the relevant driver here; in fact, the time of day doesn't seem to matter much at all.

Interestingly, neither does the only other system rule. The second table in "Optimized results" shows an optimization of going long when under the opening price, short if over it — the complete opposite of the optimized results in the first table. The opposite logic doesn't show the same level of overall profit or unanimous winners, but most of its rows are positive. Wouldn't you assume that none would be profitable given the profitability of every mirror image system line?

In short, it's not the time of day that's producing the 15-min-

OPTIMIZED RESULTS

The bar on which we enter in the direction of the open seems to play little role in the profitability of the system itself. In fact, neither does the direction. The one constant, however, is the $200 stop.

	zzzzzz n	Test	All: Net Profit	All: Gross Profit	All: Gross Loss	All: Total Trades	All: % Profitable	All: Winning Trades	All: Losing Trades	All: Avg Trade	All: Max Intraday Drawdown	All: Required Account Size	All: Return on Account
1	1	1	26,670.00	441,350.00	-414,680.00	2,741	23.71	650	2,086	9.73	-11,570.00	11,570.00	230.51
2	2	2	19,430.00	428,940.00	-409,510.00	2,740	24.49	671	2,066	7.09	-25,950.00	25,950.00	74.87
3	3	3	67,370.00	456,690.00	-389,320.00	2,740	27.74	760	1,971	24.39	-10,650.00	10,650.00	632.58
4	4	4	57,190.00	441,420.00	-384,230.00	2,740	28.83	790	1,942	20.87	-16,240.00	16,240.00	352.16
5	5	5	66,110.00	441,700.00	-375,590.00	2,741	30.06	824	1,912	24.12	-13,720.00	13,720.00	481.85
6	6	6	80,640.00	450,210.00	-359,570.00	2,741	31.00	852	1,889	29.42	-6,230.00	6,230.00	1,294.30
7	7	7	80,680.00	441,900.00	-361,220.00	2,741	32.21	883	1,847	29.43	-8,500.00	8,500.00	949.18
8	8	8	66,710.00	428,240.00	-361,530.00	2,741	32.03	878	1,857	24.34	-9,950.00	9,950.00	677.24
9	9	9	55,880.00	408,060.00	-352,180.00	2,741	33.64	922	1,812	20.39	-13,490.00	13,490.00	414.23
10	10	10	73,610.00	418,500.00	-344,890.00	2,741	34.80	954	1,779	26.86	-9,910.00	9,910.00	742.79

	zzzzzz n	Test	All: Net Profit	All: Gross Profit	All: Gross Loss	All: Total Trades	All: % Profitable	All: Winning Trades	All: Losing Trades	All: Avg Trade	All: Max Intraday Drawdown	All: Required Account Size	All: Return on Account
1	1	1	14,090.00	442,990.00	-428,900.00	2,741	20.36	558	2,179	5.14	-19,410.00	19,410.00	72.59
2	2	2	-19,650.00	409,820.00	-429,470.00	2,741	20.03	549	2,187	-7.17	-30,460.00	30,460.00	-64.51
3	3	3	-11,980.00	408,980.00	-420,960.00	2,741	21.38	586	2,146	-4.37	-22,540.00	22,540.00	-53.15
4	4	4	5,410.00	419,070.00	-413,660.00	2,741	22.62	620	2,114	1.97	-17,640.00	17,640.00	30.67
5	5	5	9,810.00	415,940.00	-406,130.00	2,741	23.90	655	2,081	3.58	-22,320.00	22,320.00	43.95
6	6	6	3,970.00	409,110.00	-405,140.00	2,741	23.97	657	2,078	1.45	-21,800.00	21,800.00	18.21
7	7	7	850.00	398,370.00	-397,520.00	2,741	25.28	693	2,038	0.31	-27,040.00	27,040.00	3.14
8	8	8	-7,400.00	384,700.00	-392,520.00	2,741	26.19	718	2,016	-2.70	-32,900.00	32,900.00	-22.49
9	9	9	-21,980.00	370,150.00	-392,130.00	2,741	25.72	705	2,030	-8.02	-51,190.00	51,190.00	-42.94
10	10	10	310.00	385,190.00	-384,880.00	2,741	26.89	737	1,995	0.11	-35,940.00	35,040.00	0.86

Source: TradeStation

ute system bias. It's not particularly the direction you follow relative to the opening. Though following the momentum is better than fading it, both sides can show profit as everything else remains equal.

The real key to success is the tight $200 stop. It'll get hit a lot, but when it doesn't, the potential is near-unlimited. Δ

Art Collins is the author of "Beating the Financial Futures Market: Combining Small Biases into Powerful Money Making Strategies."