THE TRADERS' MAGAZINE SINCE 1982 www.traders.com MAY 2014

TECHNICAL ANALYSIS OF STOCKS & COMMODITIES™

MAY 2014
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TECHNICAL ANALYSIS OF STOCKS & COMMODITIES™

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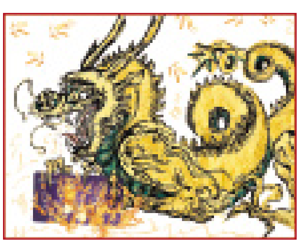
MAY 2014, VOLUME 32 NUMBER 6



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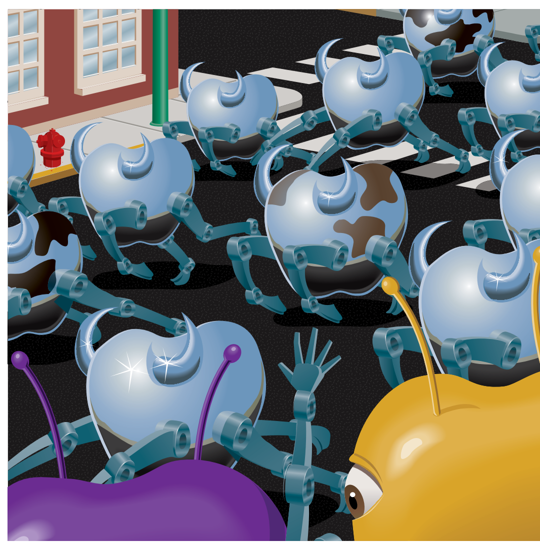

- Cover: Patrick Kelley
- Cover concept: Christine Morrison/Patrick Kelley

 Technical Analysis of Stocks & Commodities™ (ISSN 0738-3355) is published monthly with a Bonus Issue in March for $89.99 per year by Technical Analysis, Inc., 4757 California Ave. S.W., Seattle, WA 98116-4499. Periodicals postage paid at Seattle, WA and at additional mailing offices. **Postmaster: Send address changes to Technical Analysis of Stocks & Commodities™ 4757 California Ave. S.W., Seattle, WA 98116-4499 U.S.A. Printed in the U.S.A.**

May 2014 • Volume 32, Number 6

TECHNICAL ANALYSIS OF STOCKS & COMMODITIES

The Traders' Magazine™

Opening Position

One of the most challenging tasks when looking at the markets is trying to determine what you should focus on. It is always a good idea to look at the markets in the context of the bigger picture and try to find out where the market is within a larger cycle. Ask yourself questions such as, "How far has the market moved from its last major low, and how does that compare to the last similar move?" We tend to get too wrapped up in daily price movements and we focus on just the charts of what we are trading, or we just focus on making as much profit as we can, especially when the markets are bullish. When the markets are already overbought or overvalued, and are still projected to go higher — or we are led to believe so — we are tempted to want to not miss out on any profitable opportunities. It is human nature to behave this way, but we must prevent ourselves from falling into that trap.

Even though the markets have been climbing an uphill slope since 2009, we have seen some healthy corrections and signs that tell us that the markets can swing wildly, whether they are correcting or recovering. It is clear that more people are jumping into the market to make short-term gains. This is evident in the wild swings we see within the trading day. All you have to do is observe the amount of selling that goes on during the last 30 minutes of the trading day on any actively traded stock. We have had five years of a bullish move in the markets. How much longer can we expect this to continue?

The markets are showing signs of frothing — for the record, I am writing this at the end of March 2014 — even though the bias is still upward. There have been some significant swings in both directions, and this market is attracting more speculators. And if we see an increase in speculators, don't be surprised if the market reverses without any notice.

Keep an eye on the big picture and come up with methods or models that simplify the complexities of the market. Try to focus on a couple of variables and understand the relationships between these variables. You may be surprised at what you find.

Here's to good trading!

Jayanthi Gopalakrishnan

Jayanthi Gopalakrishnan,
Editor

The editors of S&C invite readers to submit their opinions and information on subjects relating to technical analysis and this magazine. This column is our means of communication with our readers. Is there something you would like to know more (or less) about? Tell us about it. Without a source of new ideas and subjects coming from our readers, this magazine would not exist.

*Email your correspondence to Editor@***Traders***.com or address your correspondence to: Editor, STOCKS & COMMODITIES, 4757 California Ave. SW, Seattle, WA 98116-4499. All letters become the property of Technical Analysis, Inc. Letter-writers must include their full name and address for verification. Letters may be edited for length or clarity. The opinions expressed in this column do not necessarily represent those of the magazine.—Editor*

OPTION INCOME STRATEGIES

Editor,

Thank you very much for the article in your February 2014 issue by Giorgos Siligardos, "Static Option Income Strategies: Do They Work?"

I am one of those option traders who use this particular option income strategy (that is, iron condors). I learned a lot from reading the piece and I think every option trader should read it. So many of the option training materials and classes out there are done by market-making companies or major industry participants outside the realm of option retail traders. As a result, there is little incentive to actually teach retail traders the critical and most important aspects of option trading. They give only basic information and there is little in-depth analysis of the markets. In my opinion, it's like the casino teaching you how to beat them at their own game, and no casino would do that.

Thanks again for the article. It was a welcome read. I would have liked it if the author had offered more in the way of solutions. I have been successful trading static option income strategies (such as the systematic short iron condor, or SSIC), but I have also lost money trading them. I have only about a few years' experience trading these strategies, so I need solutions. I hope that Siligardos will put out more solutions and alternatives to the SSIC strategies in upcoming articles.

Please do not hesitate to point me to the best option training out there, as I am constantly seeking ways to improve my trading.

CHIMAH

Author Giorgos Siligardos replies:

Thank you for your kind words about my article.

The premise of the article is that you cannot be profitable over the long run using a static, all-weather, algorithmic approach that tries to capitalize on a bet that the option market makers have a particular type of inefficiency when pricing the underlying.

I am not surprised that you were successful for some time and then you lost money. That was exactly the point of my article. Many disciples of these static strategies wonder why they ultimately failed to make consistent profits. They tend to think it's because they didn't follow to the letter what they were taught. The answer is not necessarily that they didn't follow the rules. The answer is that all these strategies are doomed to ultimate failure because they try to eliminate the guessing part of the game; a game which itself depends on guessing the future price of the underlying instrument or guessing its future implied volatility, or both. If it were that simple, you could program a computer to do all the work so that you could sit back and enjoy your profits. It's no wonder all those who promote these static strategies don't show detailed historical performance statistics based on hundreds of trades using actual bid/ask data. Advisory services that propose iron condor trades based on their own discretionary analysis of the underlying are far more honest to their clients (even when they are not profitable) than those who promise to teach you a profitable algorithmic method to short iron condors without taking any guess about the underlying.

So here is the answer to your question: The solution is for you to find out a way to increase the profits from your correct guesses about the future price (or the implied volatility) of the underlying instrument, rather than have losses from your erroneous ones.

Knowledge of option theory will only give you the means to make more efficient leveraged trades (or hedges) and to avoid losing money by mistake when you are right. From what I know, that is the correct way for the non–market makers to use the option market, and that's the central point of my articles on options. Remember one thing: All option positions (iron condors included) are good when taken properly at the appropriate time. (For example, see my May 2010 STOCKS & COMMODITIES article "Debit Or Credit," available at www.traders.com.)

Regarding the casino parable, yes, you are right. The casino will teach you how the game is played, not how to win. Regarding the critical and most important aspect of option trading for the retail trader, let me reveal it to you via the words of a fictional option market maker:

> Options are basically a means of hedging and leverage for the non–market makers. De facto, I know more than you about option pricing because that is my job, and I have powerful computational assistance, and I make a living at making the market. You cannot get rich by betting that I always make the same erroneous estimation when I price the underlying. The bid/ask spreads are my means to hinder you and protect myself.

Thank you again for your kind words about my article.

CLARIFICATION ON BENEFIT OF HINDSIGHT

Editor,

I have studied with interest Ashot Hakobyan's January 2014 S&C article, "The Benefit Of Hindsight."

I am, however, confused by his discussion of the distribution of profits, specifically the first half of the paragraph on page 11 that begins, "The most important characteristic...."

I understand and agree with the general intent of the paragraph to show that whatever ideal profit, *s*, is selected by the trader, there is an exponentially higher chance that the trader could make less, and an exponentially worse chance he could make more.

But I am confused by the sentence, "… the distribution of profits in any major market is exponential to the standard deviation, which is equal to the control parameter *s* and the mean, which is equal to 2*s*." My question is, the mean and standard deviation of *what*? The daily movement in said market prices? Or the trading system being employed? Or something else? How can the mean be 2*s* if the mean is calculated from the data and *s* is (somewhat randomly) selected by the trader?

Obviously, I am missing something. Can you help me understand?

PERRY DOLIA

Author Ashot Hakobyan replies:

For the sentence you are questioning, I had actually intended to write:

> The distribution of profits in any major market is exponential *with* [not "to"] the standard deviation, which is equal to the control parameter *s* and the mean, which is equal to 2*s*.

In other words, if you set the parameter of Ideal Trader as s *(that is, the minimum target profit), then the probability distribution of profits will be exponential — that is, the smallest profit of size* s *will have the highest probability, and the probability will decay exponentially for profits larger than* s.

The mean profit of Ideal Trader is 2s *(within statistical error) and the standard deviation is* s.

Note that the parameter s *of Ideal Trader tells it to disregard any market moves smaller than* s. *For example, if you are trading a $100 stock and are not interested in market moves smaller than $5 (based on your standard trade size and commissions), the parameter* s *should be set to $5.*

If you run the ideal trader model on your stock's historical prices, it will correctly buy and sell at local highs and lows that are $5 or more apart. The generated profits will be exponentially distributed with the mean $10 and the standard distribution $5.

I hope this clarifies. The ideal trader concept turned out to be quite an interesting market model with many applications beyond trading-system evaluation.

I refer you also to my March 2014 STOCKS & COMMODITIES article, "Fading The Big Moves," which looked at profiting from big moves in the market and also used the "ideal trader" concept.

PLANETARY CYCLES AND TRADING


Trading Using Planetary Movements

Editor,

I read Khit Wong's article in the 2014 Bonus Issue of S&C ("Trading Using Planetary Movements"), and it was most interesting. In it I see that forex pairs are being traded and taught. That is very encouraging to me, as I only trade forex pairs. It would appear that a trader can use Wong's method effectively on forex. Is the complete method further explained in Wong's book?

I have been working on ingresses, aspects, and retrogrades for years, but my method has resulted in poor returns. It would be appreciated if the author could elaborate more. Thanks very much.

MATT

Author Khit Wong replies:

Thank you for your letter. A lot of astro traders fail because the cause and effect relationship between the heavenly bodies and the stock prices is very dynamic. Astrocycles, which influence price movements of forex pairs, are constantly interchanging. Sometimes, the euro/US dollar pair is under the influence of Jupiter ingresses; sometimes, it is under the influence of Mercury/Venus conjunctions; and yet sometimes, it is under the influence of Earth, Jupiter, and Saturn, forming trineaspects among them.

A lot of times, when traders start to realize a certain forex pair reaction exists, such as the price making a sudden gap down move on a particular astro setup, the trader will likely find it to work in the market for some time more; but when they become confident on this discovery and start to bet bigger, they also find it suddenly fails to work. That is also the reason that most of the marketed astro software/theory in the market does not work, as by the time the author publishes a new theory, the underlying astrocycle has already changed.

As a matter of fact, there are specific rules guiding these cycle shifts, and my book focuses on why this interchange of cycles happens and explains the back-end logic of how these astrocycles interchange. I go into how, why, and when you can expect one astrotiming to work out in the market and, more important, when you should expect it will stop working in the market. I must say, financial astrology is a very precise science once you know how it operates.

We do provide email support on material covered in the book. Please let me know if you have any further queries.

MORE ON PLANETARY CYCLES AND TRADING

Editor,

Khit Wong's article "Trading Using Planetary Movements" in S&C's 2014 Bonus Issue is a good one. What he shows looks interesting, and despite the fact that I have read tons of books and magazine articles, I haven't seen anyone mention this trading method yet.

I have a quick question for the author. Normally, the market indicator would need to be updated regularly as situations develop. So does this need fine-tuning, and how?

SCOTT

Author Khit Wong replies:

Thanks for your message. Market indicators need fine-tuning because sometimes they are not the right indicator with which to time the market movements, and since market conditions change every day, traders often like to change variables so that they will fit well with the current market movements.

In fact, my astro indicators will not *continuously perform well over time. What we need to do is to pick the* right *indicator at the* right *time. For example,* *instead of sticking with the relative strength index (RSI) to locate tops & bottoms, which may have been working well in a range-bound market, and, if the market changes into a trending market, trying different variables such as a nine-day, 14-day, or 20-day RSI to try to project future tops & bottoms, traders should actually pick* another *indicator such as a moving average to spot future tops & bottoms. Similarly, with astro indicators, you will find that sometimes Mercury rules the commodities, and sometimes you will find it is Venus and Jupiter that rule the commodities, and yet other times you will find that Neptune, Saturn, and Earth rule the commodities conjointly. What you need to learn is how to choose the* right *planet(s) for predicting tops & bottoms.*

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Editor,

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MINH NGUYỄN THẾ (via Facebook)

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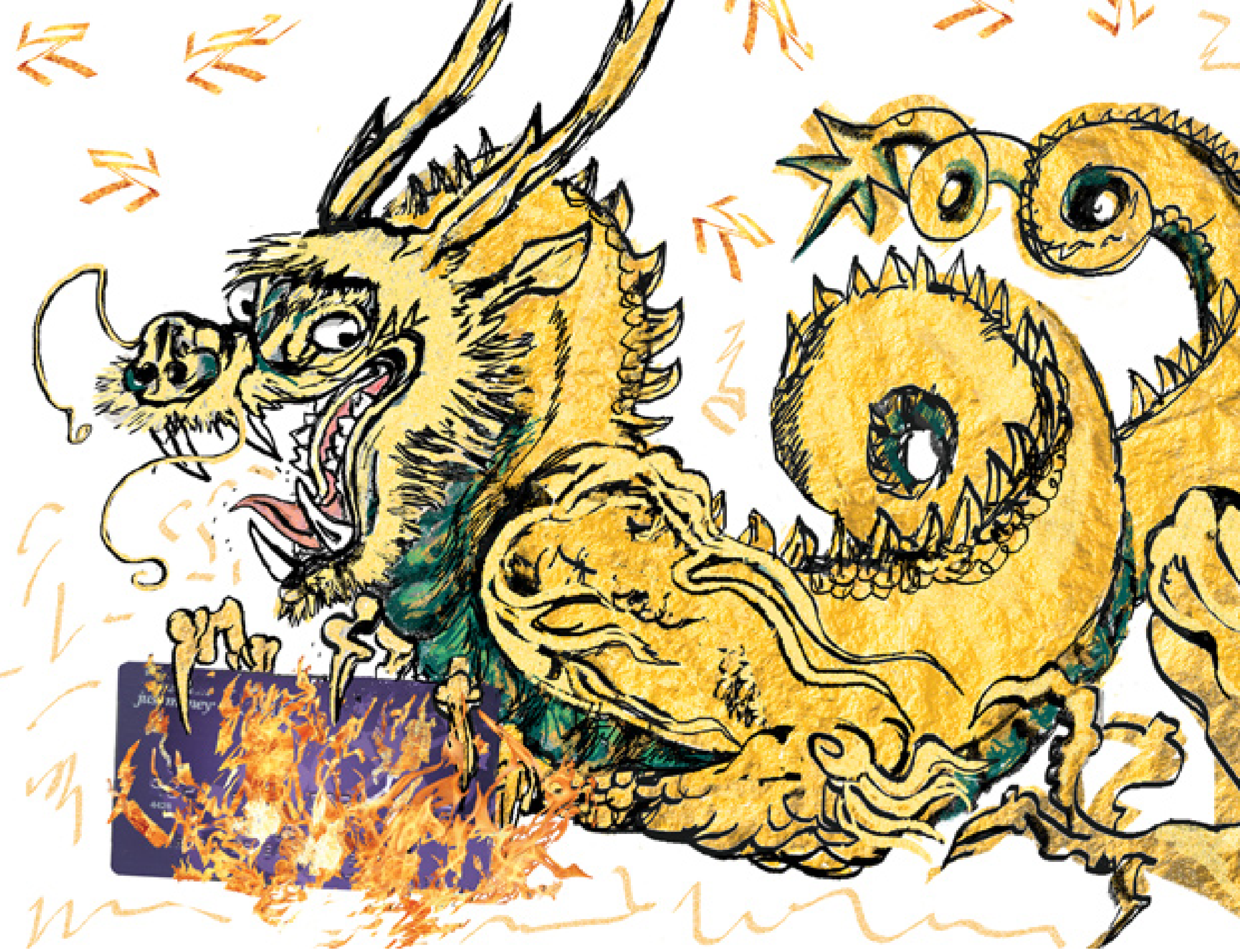


CHRISTINE MORRISON

Look Before You Leap

The Truth About Stock Trading And Chat Rooms

If you think that joining a trading or chat room will show you how to trade like traders on Wall Street, think again. Here's what you should really *be doing.*

by Josh DiPietro

In 1998, I lit up my first trading screens. I began online trading in the comfort of my home in sunny San Diego. Soon after that, I was eagerly searching for online trading rooms and stock chat rooms. I was seeking a knowledge center where I could absorb stock-picking information from experienced, professional daytraders.

I didn't know a lot back then, but I was certain of one thing: the holy grail for any greenhorn would be live video and a real-time order execution feed to an expert stock trading floor. Later on I learned that was naive, sometimes fatally so. And it was also typical. Novice traders are understandably driven to seek guidance, even though they have not forged their own successful trading systems. I wasn't the first beginner to search for live trading rooms, desperately hoping for some much-needed magic. In this article, I'm going to demonstrate how those trading rooms either don't exist, or in the cases where they do, how they are seriously misleading. In some cases, they are even illegal.

The early years

In my early trading days, I didn't know any better. After reading through a library of trading books and attending some pricey seminars, I still didn't know what I was doing. I knew that I still needed the training wheels that would help raise my confidence in my own trades. I needed them badly. Hemorrhaging my capital had become the norm for me. Excuses had become my best friend — my *only* friends. I felt like I was attempting heart surgery without having gone to medical school.

Like most novice traders, I wasn't what you'd call rich. So with every trade I made, I had to be in the green, or in no time I would get one of those dreaded margin calls. You could say I was trading in the dark. It was like walking into a casino with all of my life savings, and then rolling the dice during a blackout.

Obviously, having some sort of confirmation from a stock-picking forum would help my peace of mind, even if most of the information came from other beginner traders who sat at their independent, home-based trading desks wearing robes and slippers, like me.

After relentlessly searching, I got hit with this reality hammer: There were no *real* online trading rooms. By *real*, I mean watching traders in real time executing positions during market hours. All of the chat rooms I found had primarily *wannabe* daytraders who weren't even close to trading like the big boys on Wall Street.

In most cases, the operators (not real daytraders) of these trading rooms were inputting their intraday order executions *after* the trade had happened. In other words, they were reverse-engineering the trade setups to make it appear as though they predicted the reversal.

This still goes on in many trading rooms today. Most newbie traders focus on the net trading gains and profit/loss performance ratios of online trading rooms without knowing they're dealing with something unregulated and self-published. Knowledge-seeking traders should concern themselves with not only the trading room's results, but with exactly how its system works. This is why I feel it is necessary to be formally trained on the trading system before accessing a trading room.

The need to be trained on how to properly use information is obvious. However, most novice traders are too busy to pursue professional training, and they're too eager to try and make quick and consistent profits, with little or no proficiency.

Most online trading rooms —whether lone-wolf style or mega-broker ones — thrive on the belief that typical beginning traders would rather see results than learn the system entirely. This makes the novice easy prey for fly-by-night gougers.

Even when I was a vulnerable beginner, I had a feeling this was so. I knew that I should find some instruction that first taught me the system and then *proved* to me that it worked, before I did any real trading. I found there was no such animal. Back then it was impossible to find a training situation that had real daytraders coaching you one-on-one.

I resigned myself to the fact that if I wanted to know what and how Wall Street was trading, I had to physically be there. I had to be on a *real* trading floor, at a reputable investment firm or bank, and I needed to be a licensed stock broker. At the time, that was the reality for the independent online daytrader. Unless you moved to New York City, you were essentially on your own. This is still true today unless you hook up with a well-established mentor/coach who has already learned the ropes on Wall Street and will train you with a reliable trading room.

Professional day traders stick with the same stocks every day, and they trade them in accordance with their individual thresholds for risk.

Before my momentous move to Manhattan, I had to settle for the *nonprofessional* chat rooms that focused on the stocks I was trading or planned to trade. I say *nonprofessional* because you won't find real daytraders in chat rooms; we don't have time for that. We're preoccupied with trading our own stocks.

Back then, Yahoo! was the go-to forum for chatting online about stocks. Knowledge-seeking newbies converged there to learn, and best of all, it was free. Those were the places to go when you wanted to vent your frustrations about the market being "shady." The chat rooms were also where you ran to when you needed to convince yourself that your current stock position was the right choice.

You've probably been there yourself. You know how those inner dialogues go: "The earnings have got to be good considering the new product launch is going to revolutionize the industry … good earnings means the stock will go higher," and so on.

Oh, really? Chances are, Wall Street would have already bought the price up before earnings and plans to sell off into good news.

My stomach churns when I think of all those convincing chats I read, most of which turned out to be nothing but dangerous misinformation — all the "talking up" of a company's future because of some new product launch; and a few days later, my eyes would be nearly crossed from watching the stock plummet!

Like lots of other people, I was suspicious of some sort of Wall Street conspiracy going on. There was no conspiracy, and there isn't one now. You just need to know your stock's price levels and stick to a system that works. Wall Street's system works. I'll explain more about that a little later. The bottom line is, chat rooms are nothing more than *chats*.

If you're only breaking even and/or losing on most trades, it's time to give up on the trading room you're using. You really only have two options: Either make the wise investment to get yourself formally trained, or stop trading because you're chucking money into your monitors. When you're trading in the dark, it's amazing how your capital just disappears.

In my book *The Truth About Day Trading Stocks*, I include a chapter titled "News is noise." The primary point is that if you're caught up in the hype, then you're missing out on the actual trades that real Wall Street traders execute intraday. In 2006, after my first eight years in the trenches, I finally stopped tuning into other people's speculations and whatever trades they were executing, because whatever was working for them wasn't meant to work for me. I'll come back to that, too.

There can be intelligent discussions on company fundamentals in chat rooms, and some trading rooms really do show great trade setups. But it's more important to focus on technical charting and your own trading procedures that matter when you execute real trades. It's all about your stock's price levels — current and historical support & resistance. You have to be in rhythm with your own stock and not be molded by online babble.

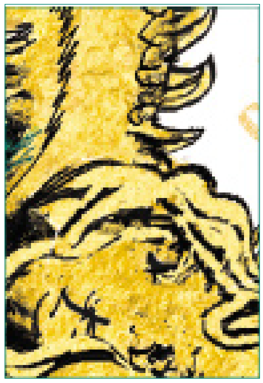
At one point, before I moved to Manhattan, my internal light bulb lit up. My trading became more consistent. My system was not yet refined, but I was getting closer to success. I began to focus on a small list of stocks and traded them every day. I didn't know it at the time, but my method was similar to what most equity traders were doing on Wall Street, even though I was only trading in 100-share blocks.

Professional daytraders stick with the same stocks every day, and they trade them in accordance with their individual thresholds for risk. None of their decisions are based on a chat room or on another firm's live trading room.

The big city

In 2007, I visited Wall Street. I got on a plane on the West Coast and headed east just to observe the New York City private equity trading floors. I quickly discovered that what I'd looked for online has always been around — brick and mortar. It didn't take me long to decide to move to the concrete jungle and trade on private equity floors, sitting right next to veteran traders. That two-year stint in Manhattan was both horrifying and thrilling. But in the end, I had made it! That was when I truly launched as a professional trader.

From that real-world experience at the nerve center of trading, I learned everything I know today. Now I'm back in sunny San Diego, the place I love the most, trading my own system, right at home. It's based on what I learned from the big boys. I have no need for someone else's chat room or trading room. I have my own now.



Why would you need a trading room?

It's natural for any novice trader to want access to a reputable trading firm's actual, live trades. It's nice to see others consistently earning profits on most of their order executions. In addition, many newbie traders try to reverse-engineer trade setups. But I'm going to demonstrate that you *don't* need a trading room, and that it can be detrimental to use one.

When one firm or lone-wolf trader has decided to enter a stock at a certain price level, it doesn't mean you should do the same thing. It's crucial to be mindful that you can't reverse-engineer a trading system — not even a reputable and proven one — by simply looking at the charts and backtesting the entry or exit prices and time stamps. This is because every trader has different thresholds for risk, and every trader has different amounts of trading capital (buying power). For example, I may profit on a trade made today at the same entry price as you, but you may be stopped out before the price hits the profit target. I can afford to go further in the red, which means I can hold a position longer than you can. Furthermore, there will *always* be lower support levels and higher resistance levels to reenter a position, when and if the price continues to run against you.

You need to know which initial entry levels work best for your capital restrictions and personal risk management. This is why someone else's trading room works best for that person, not you.

Find a system that works for you

I intraday trade the levels, but I also swing trade. My system is a fusion of both strategies. Therefore, my log sheets would be confusing to anyone who doesn't know how each system is traded. I'll use my swing trading strategy to illustrate my point. In Figure 1 you see a screenshot taken from

Daily HIGH Levels		Daily LOW Levels	
DATE	PRICE LEVEL	DATE	PRICE LEVEL
5/30/2013	194.77*		
6/10/2013	193.58		
7/9/2013	191.98	4/6/2013	177.77
4/15/2013	185.67		
5/7/2013	184.06	6/24/2013	174.18
1/8/2014	182.88	1/6/2014	172.9
11/22/2013	180.85	4/24/2013	169.58
		12/19/2013	166.71
8/8/2013	177.18		
		7/31/2013	165.55
9/18/2013	173.85		
1/31/2014	171.47	1/29/2014	164.01
2/6/2013	169.59	9/11/2013	162.36
11/7/2013	168.75		
1/10/2013	167.09	1/16/2013	160.38
		3/18/2013	159.26

5%

FIGURE 1: A SWING TRADING SYSTEM. Here, a 5% price range is used to identify swing support & resistance levels. This enables you to see all the price levels that could be possible entry points.

You need to know which initial entry levels work best for your capital restrictions and personal risk management.

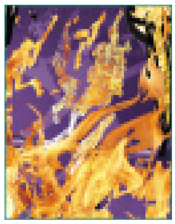
my online trading room. I will use PNRA for this example.

I use a 5% price range when acquiring my swing support & resistance levels. This means that if my system deems the initial (or current) support is at $177.77, then I will find all the levels within $8.90 (0.05 * 177.77) below the first support, which I call the first tier. In this example, the $177.77 is the first tier within 5% of the fourth tier at $169.58.

If the price runs against me after my initial entry off the first tier of $177.77, I will accumulate more shares at each of the lower three remaining tiers within 5%. This requires me to have enough capital to purchase a total of 400 shares, but only *if* the price drops before reversing for my intended profit. In general, I always take a $2 profit on my swing trades. I trade in 100-share block trades, and all my stocks are priced between $100 and $250.

If you're watching someone else's trading room and entering at the same levels they are, then you'd better know what you're doing. More important, you better have enough capital in case the price runs against you. This is why trading rooms are not as helpful as you think, unless you have been formally trained on the system the trading room is using.

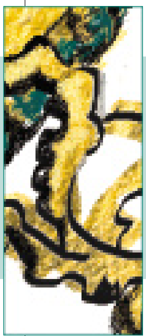
In my training program, I show all my trainees how to find the levels on the charts. But it's up to them to know their own capital restrictions and risk thresholds. I will present two scenarios with two extreme outcomes. They each begin with the same swing entry price level of $177.77.



SCENARIO 1

Say you're not aware of how the entire system works, but you decide to trade the $177.77 level because the operator of the trading room is showing that as a support level and he will enter a long position once price breaks below it.

You may not realize that the trading room operator enters $1.00 *past* the support level and will also enter at the three additional tiers (three support levels) that are lower than $177.77 if the price runs against the first entry. In other words, he's prepared to accumulate all four tiers, maxing out at 400 shares. But if you only have enough for 200 shares of this stock and



It is more important to focus on technical charting and your own trading procedures when you execute real trades.

you decide to enter at $177 and the price quickly runs down to the $174.18 level (second tier), what do you do?

The operator of the room is showing he will also enter at the second tier $174.18 level. He will have 200 shares with an average price of $174.98. If you also enter at the second tier, you have no cash left to purchase the remaining third and fourth tiers. But you enter anyway because the trading room is entering at these levels, and you don't know any better.

Do you see where I'm going with this? You have a personal threshold for risk. If the price runs $5 against you, then you would prefer to exit the position. In this scenario, price runs all the way down to the fourth tier and the operator enters again $1.00 past at 168.58. Your trades had an average price of $175.98, but you were stopped out at $170.98 ($5.00 in the red).

Guess what happens to the operator's trade setup? He entered all four tiers with an average price of $172.60, and after his last entry, it was $168.58. It dropped another couple of dollars over the next three days. Then, on the fourth day, price hit $174.60. He exited his 400 share position with an $800 profit. Meanwhile, you lost $1,000. You both entered off the same initial level of $177.77, but you lost. There's no guarantee that you would have made a profit if you had held on. What I can guarantee you is that if this is the game plan you follow, you will not last long in this profession.

Scenario 2

Say another trader stumbles across the same live trading room. But before he starts trying to follow and mimic the operator's trades, he gets formally trained on the system the room is using. Since he knows the system, he waits for the final tier (fourth-tier support of $169.58) to trigger. He enters at $168.58 and shortly after that, exits at $170.58 for a $200 profit.

Notice that he still has 100 shares available to purchase the next level *outside* of the 5% range if price continues to drop. This trader knows what he's dealing with because he was formally trained on it, and thus, he comes out on top.

There's a lot to learn

The two scenarios I showed here are just a peek at what really happens in trading rooms. It takes a lifetime to understand how systems work. I can't repeat it enough: You *must* know a trading room's strategy before trying to fuse it with your own trading limitations.

Josh DiPietro is an internationally published author and daytrader and provides mentorship programs for aspiring daytraders. He is a frequent speaker at MoneyShow and Traders Expo conferences. He may be reached at DayTraderJosh.com.

"My GPS says my emerging market funds will submerge..."

Further reading

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FUTURES FOR YOU


Carley Garner

INSIDE THE FUTURES WORLD

Want to find out how the futures markets really work? Carley Garner is the senior strategist for DeCarley Trading, a division of Zaner Group, where she also works as a broker. She authors widely distributed e-newsletters; for your free subscription, visit www.DeCarleyTrading.com. Her books — Currency Trading In The Forex And Futures Markets*;* A Trader's First Book On Commodities*; and* Commodity Options *— were published by FT Press. To submit a question, post your question at http://Message-Boards.Traders.com. Answers will be posted there, and selected questions will appear in a future issue of S&C.*

NEW DATA FEES

What will the new CME data fees mean to retail traders?

Throughout my decade in the futures industry, the CME Group (and one of its predecessors, the Chicago Mercantile Exchange) has made relentless strides in technology; the organization's efforts have been incremental in the process of bringing the futures markets to the masses. However, recent actions taken by the CME Group will likely force the commodity industry to take a few steps in the opposite direction. Higher fees for traders, but more notably, nearly crippling costs for brokerage firms and platform vendors might leave an already struggling industry in dire straits.

Data fees charged to retail traders (nonprofessional)

Much to the dismay of industry insiders, on March 1, 2014, the CME began to enforce its new data fee policy to any newly opened trading account that qualifies as *nonprofessional*.

In its simplest form, a nonprofessional is the average retail trader who participates in the markets in capacities other than as a sole source of income. The fees charged to this group of traders will amount to anywhere from \$3 to \$15 per month for access to live quotes, charts, and depth-of-market panels within their trading application. These fees do not apply to traders who place their orders via a full-service broker or trade desk; they only apply to those who wish to have electronic platform access to *live* price data. Those nonprofessional traders with open and active trading accounts initiated before March 1 were granted a waiver from any additional data fees until January 2015.

For all intents and purposes, this particular data fee charge being implemented by the CME Group is a mere inconvenience to the brokerage firms and platform vendors who must enforce the policy, and an annoyance to traders who must pay the fee. It likely isn't a deal breaker for serious traders. However, given the record-breaking revenue generated by the CME Group prior to these new fees, it tends to rub people the wrong way and is deterring some casual traders from considering commodities over alternatives such as forex and stock exchange traded funds (ETFs).

Data fees charged to industry professionals

Those who qualify for the *professional* designation will carry the brunt of the burden (such as brokers, trade desk clerks, Commodity Trading Advisors, and so on). In my opinion, the unintended (or maybe not so unintended) consequences of this new *tax* levy on industry insiders will put a substantial number of small brokerage firms out of business. Further, it could dramatically reduce the size of larger firms because the increase in costs will act as a deterrent to hire new employees. At the time of this writing, there were still a lot of questions in regard to how the data fees would be applied to professionals using multiple platforms, but it is safe to say the cost increase will likely fall into the several hundred to thousands of dollars per month, per user.

The average commodity trader might assume that fees charged to the professionals have a minimal impact on their trading experience, but that isn't necessarily true. If I'm right about the consequences of the data fee charges, it will mean that brokerages could have far fewer employees to service accounts and help account holders navigate the difficulties of leveraged speculation. In a nutshell, I believe there is a chance that as the quality of customer service deteriorates, the odds of success for traders who rely on those services also deteriorates. This is because brokerage firms of all service levels (deep discount or full-service) will be less efficient at providing quality client services that are imperative to help clients survive what we all know are treacherous markets. Believe me when I tell you that longer hold times, slower response times, and a less knowledgeable staff will negatively impact traders of all sizes and experience levels.

In addition, fewer futures brokers will eventually lead to fewer market participants and lower contract volumes, and this will eventually work against cost efficiency. After all, if there are fewer traders (professional and nonprofessional) carrying the fixed cost burdens, then commissions and other brokerage charges are most likely going to go up on an individual basis for all market participants. This is something that might be the proverbial shooting of the foot by the CME Group.

What can you do?

Of course, only time will tell how all of this pans out, but it is something that market participants of any type or capacity should be keeping tabs on. Higher data fee costs charged to nonprofessional and professional traders will have an impact on all market participants regardless of trading capital or experience. Accordingly, it is imperative that you voice your opinions to the CME by sending an email to marketdata@cmegroup.com.


HOG

I Can See You!

Trading Signals With Darknet Channels

How can patterns not be visible to the naked eye when the chart is in front of you? You'll be surprised. Here's a process that identifies such patterns and identifies trading signals.

Technical indicators use past stock data to generate buy and/or sell signals in the stock. Two well-known technical indicators are moving average crossovers and moving average convergence/divergence (MACD). But there is a lag between price action and the buy & sell signals that these indicators generate. Our goal is to use price pattern matching to come up with a method that has the potential to generate buy & sell signals with little or no lag. This involves comparing known bullish and bearish patterns against the latest stock data, and as soon as the pattern is recognized, a buy or sell signal will be generated.

In this article, we will detail a process for objectively identifying buying opportunities in tradable securities using a mathematical process that we refer to as *Darknet*. This process has been dubbed Darknet because it identifies a trade pattern in a bar chart that is hidden from direct view; that is, not visible to the naked eye. This pattern-finding method can be used to identify trading signals for any tradable security or call option on a security.

PATRICK KELLEY

THE STARTING POINT: FINDING CHANNELS

We will start with stock data from a specific time period where we will find what we refer to as stock *channels* for various *day windows*. We initially set the *number of day* parameters to 2, calling them *day start* and *day end* and looking for channels using those lengths. For each day window, we calculate the line that best fits the data — commonly referred to as the regression line — and note the slope of that line. We can then compare the regression line for each day window to the regression line for all other day windows in the test to find the ones with the highest slope, the lowest slope, and the slope closest to zero.

For example, if we set *day start* as 20 days and *day end* as 90 days, we then first calculate and note the slope of the best-fit line looking back 20 days from today. We then do the same thing by looking at 21 days of data, then 22 days of data and so on until we finally look back 90 days. At this point, we have an array of regression lines to analyze.

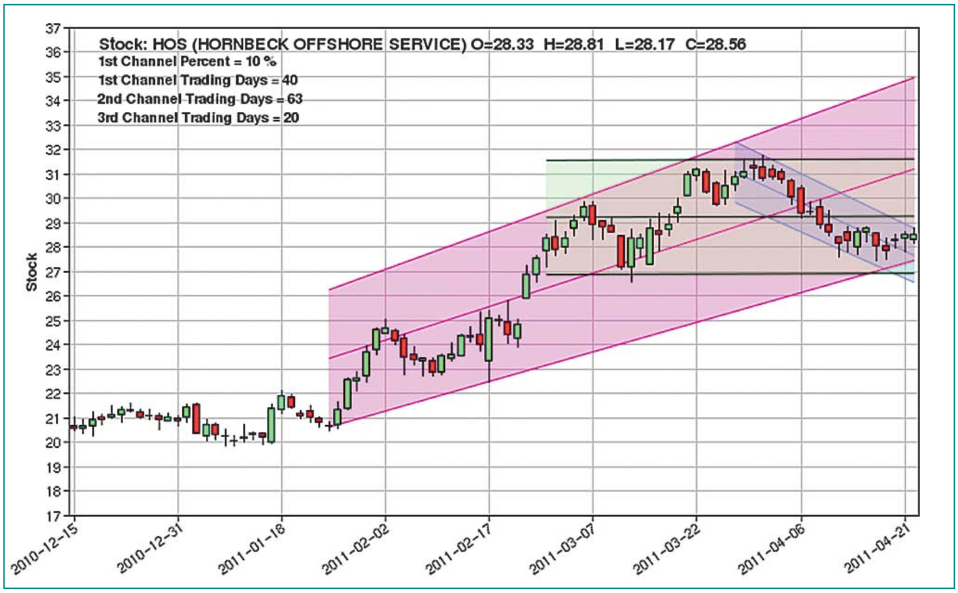
A given stock channel is characterized by three parameters:

1. The number of days in the channel, or the day window (parameter d);
2. The slope of the regression line (parameter s);
3. The width of the channel in percent (parameter w). The width percent must contain all the stock close values inside the channel for d days.

Next, we want to go through the various day windows and find the best:

- Up channel – the one with the highest slope
- Down channel – the one with the lowest slope
- Sideways channel – the one with a slope closest to zero.

by John Broussard and Jay Kaeppel



OPTIONSANALYSIS, INC.

FIGURE 1: THE THREE CHANNELS. Here you see the best up, down, and sideways channels plotted on the daily chart of Hornbeck Offshore Services, Inc. (HOS). The best sideways channel is 40 days in length, the best up channel is 63 days in length, and the best down channel is 20 days in length.

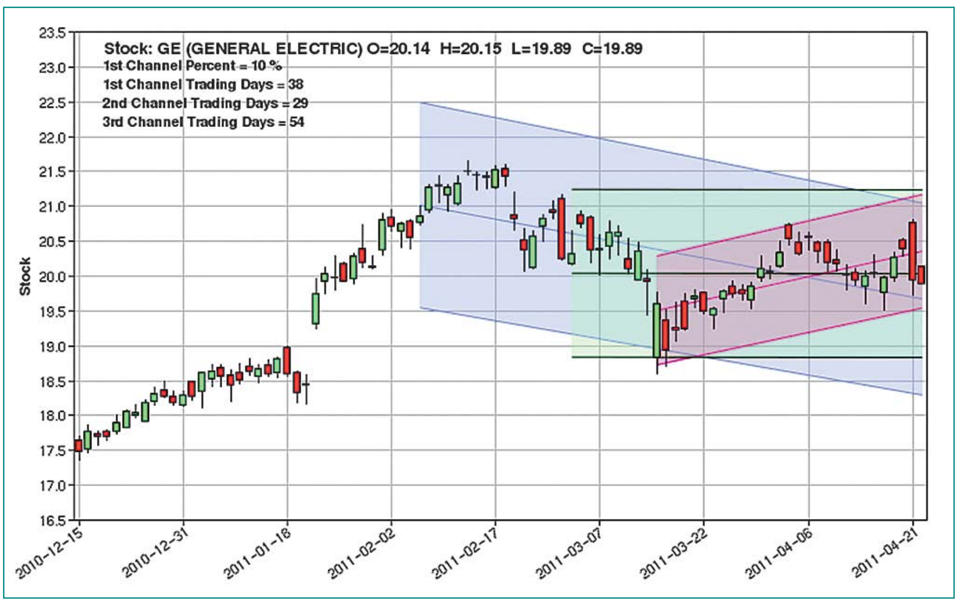


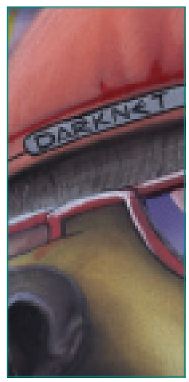
FIGURE 2: CHANNEL PATTERN FOR GENERAL ELECTRIC (GE). Here, the longest channel is the down channel, which is 54 days in length, the sideways channel is shorter at 38 days, and the up channel is the shortest at 29 days.

An example of these three channels is shown in Figure 1. As of the last date of data in the graph:

- The best sideways channel is 40 days in length
- The best up channel is 63 days in length
- The best down channel is 20 days in length.

Interestingly, the channel configuration in Figure 1 also happens to satisfy a wave 4 Elliott wave pattern that has these characteristics. The short down channel is moving against the trend of the longer up channel. Many Elliott wave 4 stock channel patterns look just like the three-channel pattern shown in Figure 1. However, on any given day, the three-channel patterns can vary greatly.

In Figure 2 you see a display of the channel pattern for General Electric (GE) on the same date. Note that in this case, the channels are different from those for Hornbeck Offshore Services, Inc. (HOS) in Figure 1. There is a long down channel (54 days), a shorter sideways channel (38 days), and an even shorter up channel (29 days). What is important to note at this point is that on any given day, regardless of the action of the overall stock market, individual stocks can display unique channel configurations.



CRUNCHING THE NUMBERS

The ultimate goal of all of this is to investigate whether the three-channel pattern can be used to identify stock and/or option trading opportunities. At this point, there are three channels — up, down, and sideways — each with three attendant parameters (*d, s,* and *w*). This creates nine independent parameters per pattern. The next step is to reduce this to six independent normalized (*n*) parameters by dividing the best up channel pattern and the best down channel pattern by the best sideways channel pattern, as follows:

Variable UpWn	= Up channel width / Sideways channel width
Variable UpSn	= Up channel slope / SiSfixed
Variable UpDn	= Up channel days / Sideways channels days
Variable DnWn	= Down channel width / Sideways channel width
Variable DnSn	= Down channel slope / SiSfixed
Variable DnDn	= Down channel days / Sideways channel days

where:

F = |Sideways channel slope| + 2
SiSfixed = Sideways channel slope + F;
(SiSfixed is always > 0)

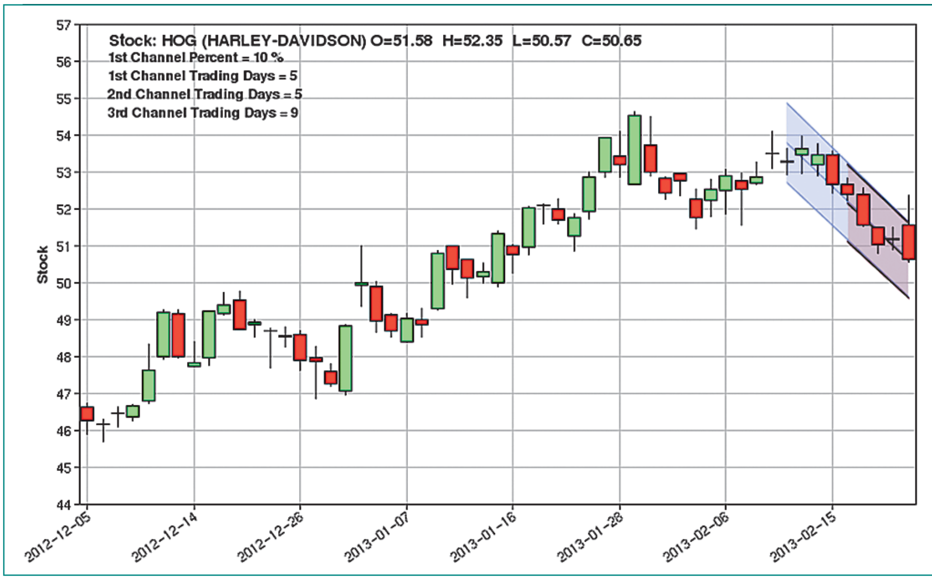


FIGURE 3: LOOKING FOR A TRADING SIGNAL. In a bullish channel pattern the down channel should be longer than the up and sideways channels, the up and sideways channels are the same, and the up and sideways channels are either inside the down channel or starting to turn to the upside but with similar channel widths.

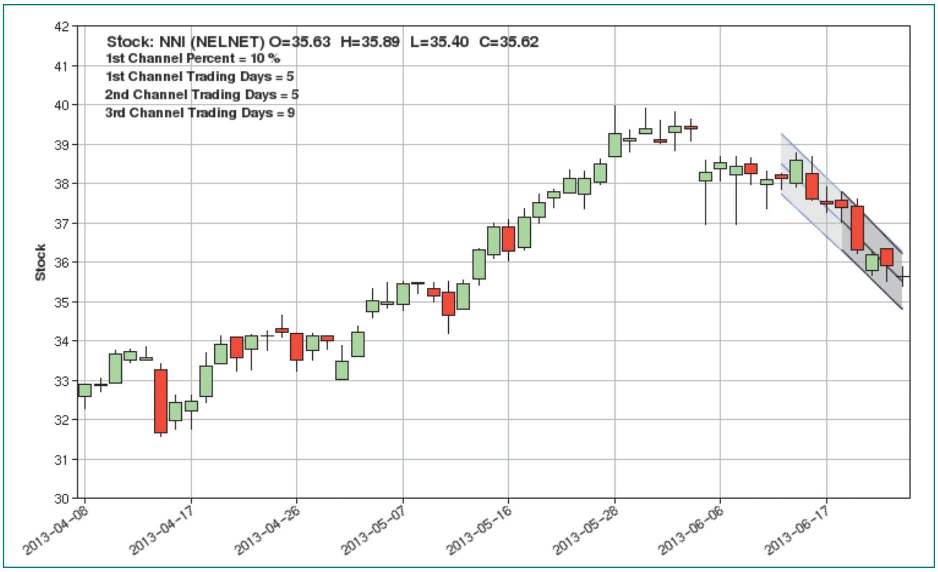


FIGURE 4: BULLISH CHANNEL PATTERN. The three sets of channels are lined up to the downside. This channel configuration tends to indicate a stock that is oversold and due for a move back to the upside.

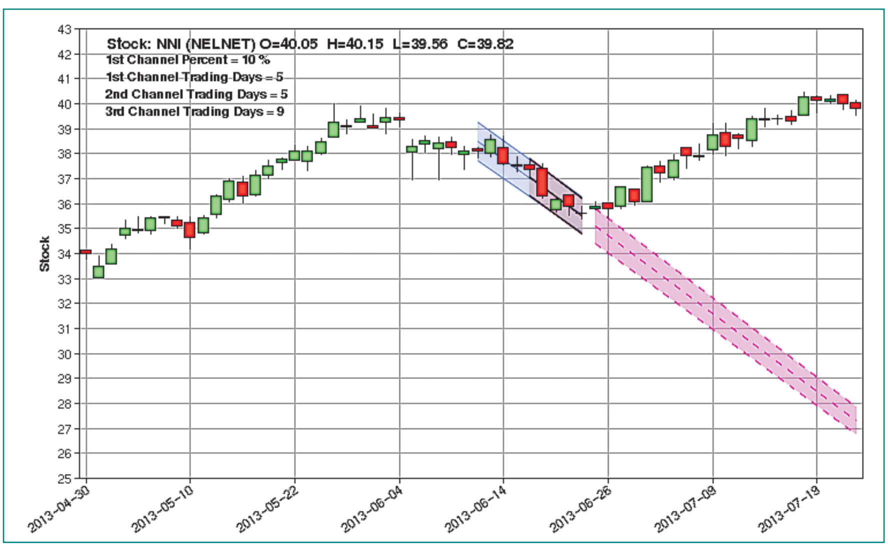


FIGURE 5: UP CHANNEL PROJECTION. Note that the stock turned higher, and 30 days after the bullish pattern was detected, the stock was trading above the upper boundary of the up channel.

The next step is to use these variables to look for an indicator that we can use to generate objective buy & sell signals. The process that was used is described in greater detail in the sidebar "Creating A Model To Generate Buy & Sell Signals." The most important thing to note from this rigorous testing process is that ultimately, the *day start* and *day end* parameter values were set to five and 13 days, respectively.

LOOKING FOR A TRADING SIGNAL

Our goal now is to use the data to objectively determine when to buy a given security and when to eventually sell it. For each security on each trading day, we vary the day window (parameter *d*) from five to 13 days and identify the best up, down, and sideways channels from this data set. We then look for a particular bullish pattern.

In Figure 3 you see the bullish channels pattern on the daily chart of Harley-Davidson, Inc. (HOG) and in Figure 4 you see the same pattern on the daily chart of Nelnet, Inc. (NNI). The key things to note in each of these charts are:

1. The down channel is longer than the up and sideways channels.
2. The up and sideways channels are the same.
3. The up and sideways channels are either inside the down channel or starting to turn to the upside but with similar channel widths.

To put it into the most generic terms possible, the three sets of channels are *lined up* to the downside. Our research has shown that this channel configuration tends to indicate a stock that is oversold and due for a move back to the upside.

CREATING A MODEL TO GENERATE DARKNET BUY & SELL SIGNALS

You first need to create training set data to tell the pattern creator what to look for. Then you need to create evaluation data not used in the pattern creator to test the design and possibly fine-tune performance.

We used:

- One day of data for all stocks in the S&P 500 stock list as the training data set
- 25 different days of S&P 500 stock data as the evaluation data set.

We want to test many one-day training data sets to see if there is a day where a bullish pattern can be more easily extracted from that day of data and the events that happen later.

The trainer pattern we will use to designate a pattern as *bullish* is if the stock is above the best up channel 30 days from now. If the stock is above the upper boundary of the up channel 30 days from now, then we will record a value of 1. If the stock is not above the upper boundary of the up channel 30 days from now, we record a value of 0.

In a vector format, we are trying to find the six x values in this simple linear equation:

$$[\, x_1 \;\; x_2 \;\; x_3 \;\; x_4 \;\; x_5 \;\; x_6 \,] * \begin{vmatrix} UpWn \\ UpSn \\ UpDn \\ DnWn \\ DnSn \\ DnDn \end{vmatrix} = \text{Trainer (1 or 0)}$$

The equation is rewritten as

$$x * a = b$$

where x is the six unknown parameters. For each of the S&P 500 stocks, 1 2 3... 500, you can stack the data into a matrix and pull out the unknown x to the left-hand side as follows:

$$x * [\, a_1\, a_2\, a_3 \ldots.] = [\, b_1\, b_2\, b_3 \ldots. \,]$$

or

$$x * A = B$$

The solution for x is obtained by multiplying the transpose of A to the right side and inverting the resultant square matrix

$$x = BA^T(AA^T)^{-1}$$

The equation $x*a$ can be interpreted as trying to find the probability of the pattern being detected. We take the x solution and find the maximum value of $x*a$ among the stocks used and name it x_{max}. We divide by x_{max} to form a forced probability estimate and create the following formula:

If $x*a/x_{max}$ > threshold, the pattern is detected.

How do you know what the best threshold value is? You bring in the 25 days of evaluation data and test all the thresholds between 0.5 and 1.0 in steps of 0.1 to find the threshold that yielded the least false alarms. Once a threshold stops improving the false alarms significantly, the process stops and you have a design.

What should the start and stop days for the three-channel patterns test be? We tested a few start and stop day pairs and settled on a design: five days and 13 days (two Fibonacci numbers). There were also specific individual days in the S&P 500 stock data space that clearly yielded better pattern-finder answers for the S&P 500 on that day and a best date was chosen among the 26 randomly selected days. (Potential areas of future research include more resources, more tradable day pairs, and more days of data to examine.)

A successful signal is defined as the stock being above the upper boundary of the up channel 30 calendar days after the bullish pattern is established. Figure 5 displays the up channel in NNI projected 30 days into the future after the bullish pattern was detected. The stock turned higher and 30 days later is above the upper boundary of the up channel.

The same process described earlier can be used to find a bearish design that will tell you when to exit your long position. This configuration is displayed in Figure 6. The bearish pattern, you will notice, is the inverse of the bullish pattern. The three key things to note for the bearish pattern are:

1. The up channel is longer than the down and sideways channels.
2. The down and sideways channels are the same.

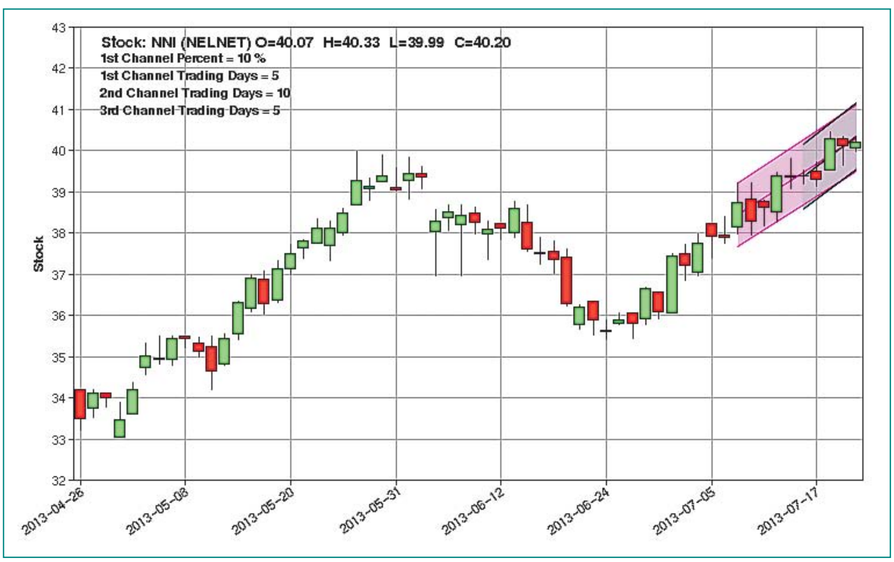


FIGURE 6: BEARISH CHANNEL CONFIGURATION. The bearish channel pattern is the inverse of the bullish pattern. The up channel should be longer than the down and sideways channel, the down and sideways channels are the same, and the down and sideways channels are either inside the up channel or starting to turn to the downside with similar channel widths.

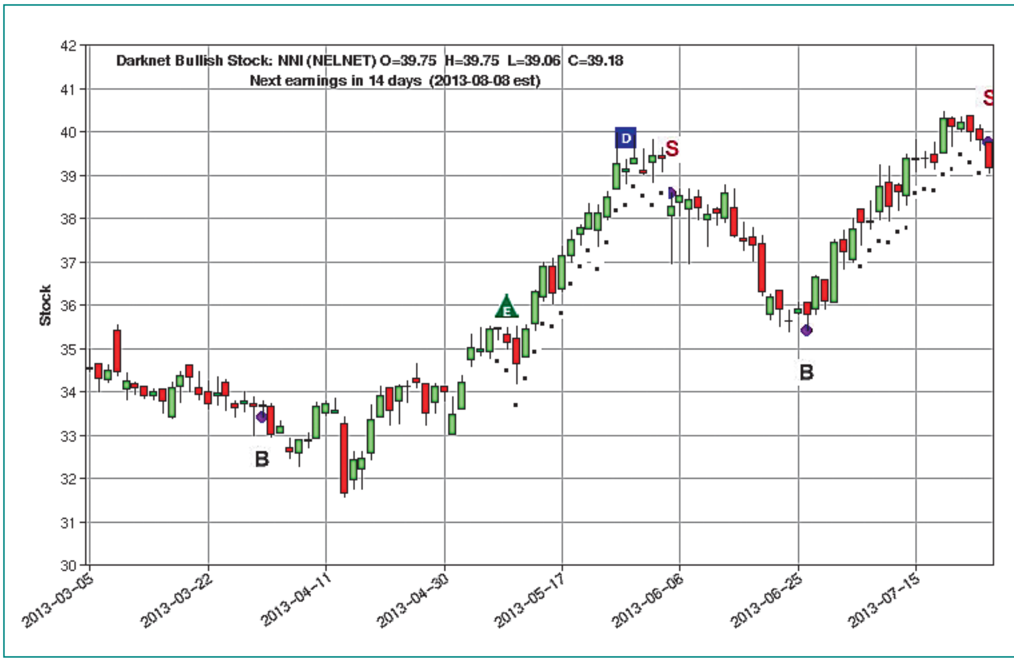


FIGURE 7: COMBINING THE PATTERNS. The B represents the occurrence of a buy pattern and the S represents a sell pattern. The channels have to sufficiently turn in the direction desired before you enter or exit a trade.

3. The down and sideways channels are either inside the up channel or starting to turn to the downside with similar channel widths.

Combining the patterns

The charts in Figures 7 and 8 show how you can combine the bullish pattern with the bearish pattern. The B represents the occurrence of a buy pattern and the S a sell pattern. The trades that result are referred to as Darknet signals primarily because, as was stated earlier, the trade patterns are in the stock charts but are hidden from direct view by the naked eye.

Adding a useful filter

An extra condition has been added to the bullish and bearish signals based on what they look like. The stock up channel in the case of the bull signal and the stock down channel in the case of a bear signal have to sufficiently turn in the direction desired before a trade is entered or exited. An example of what this looks like appears in both Figures 7 and 8.

The dots below the daily price bars leading up to the sell signal (denoted with an S) indicate that the bearish pattern was detected, but you wouldn't sell until the down channel turns downward sufficiently. Likewise, you wouldn't buy right after the bullish pattern is detected until the stock price action has turned slightly bullish. This filter is designed to accomplish two things:

1. To prevent you from buying a stock that is in a free fall by requiring at least some indication of a reversal.
2. To allow you to let your profits run rather than selling at the first hint of potential trouble.

Darknet channels prevent you from buying a stock that is in a free fall and allows you to let your profits run.

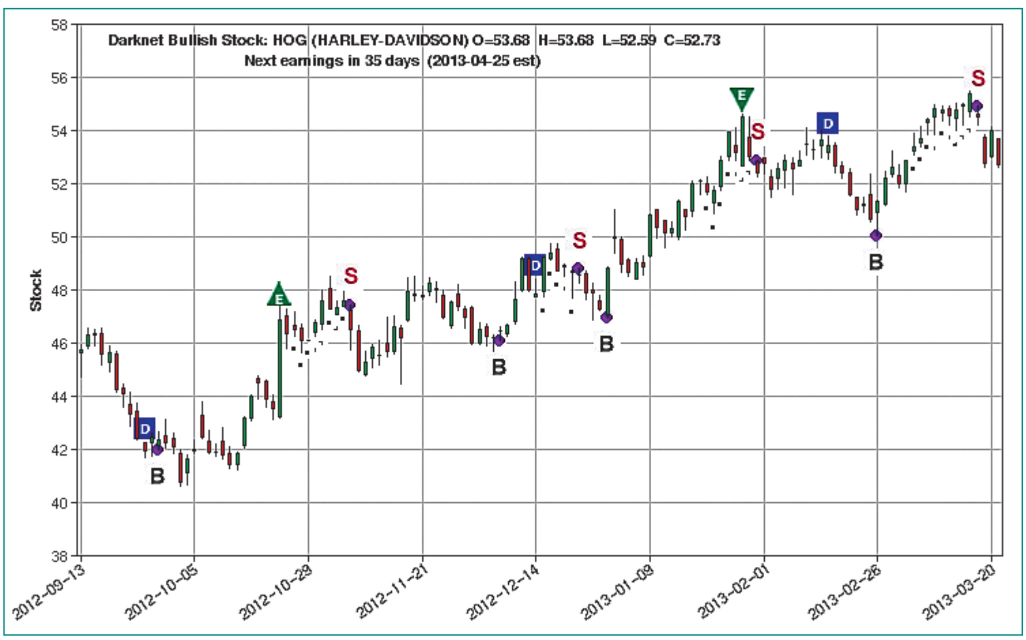


FIGURE 8: BUY AND SELL SIGNALS. The dots below the daily price bars leading up to the sell signal indicate the bearish pattern was detected. However, you do not sell the stock until the down channel turns downward sufficiently.

A tool for adding to positions

Another added feature built into Darknet is referred to as the *rebuy*. If you enter a position and another bullish B occurs before a sell signal is detected, this is denoted in the chart using the letter *R*, which represents *rebuy*. At this point you may consider adding to a previously established position by buying additional stock shares or call options at a more favorable strike price and/or expiration month than the previous buy signal.

You can see an example of a rebuy in Figure 9, which displays the CurrencyShares Canadian dollar exchange traded fund (FXC). The overall price performance for FXC was bearish during the time period displayed on the chart. However, Darknet captured the currency oscillations near the lows (B) and the highs (S). The rebuy (R) appears toward the right-hand side of the chart. Generally speaking, the rebuy signal appears infrequently but often highlights some of the most favorable trading opportunities.

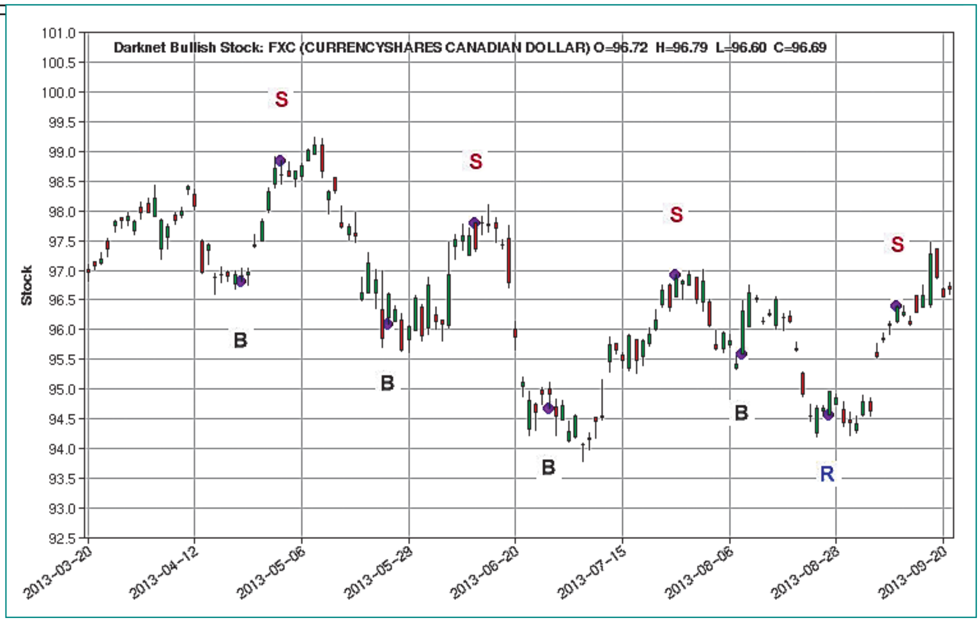


FIGURE 9: ADDING TO POSITIONS. If you enter a position and another bullish B occurs before a sell signal is detected, this is denoted in the chart using the letter R, which represents *rebuy*. You may consider adding to a previously established position by buying additional stock shares or call options at a more favorable strike price and/or expiration month than the previous buy signal.

Measuring results

Using data for the stocks in the S&P 100 index from September 2011 to September 2013, we performed a simple backtest of buy & sell signals generated using the Darknet methodology. Here are the results:

- Total trades: 431
- % of winning trades: 74.5%
- Average profit/average loss: 1.4 to 1
- 78.4% of the stocks tested showed a profit over the test period
- 35 of the 97 stocks tested experienced no losing trades during the two-year test period
- The average trade length was 33 days.

Darknet can also be used to trade call options on tradable securities. Our studies for option trades reveal that the best overall results were generated by:

- Using the closest option expiration month with at least 20 days left until expiration
- Choosing a call option with a delta between 0.4 and 0.8
- Looking for the call option closest to being 5% in-the-money and meeting the delta requirement.

Trading call options instead of stock shares allows you to commit less capital to each individual trade, and as a result you can often take advantage of more trading opportunities than if you traded shares of stock.

Explore, explore, explore

There are many areas of research related to this approach that have not yet been investigated. Still, the research done so far using Darknet methodology has generated some useful results. More than anything, this research has highlighted the potential for using mathematical formulas and pattern analysis to identify potential opportunities that cannot be found using traditional forms of charting and technical analysis.

John Broussard is the co-owner and lead developer for Optionsanalysis, Inc. He has worked on stock trading algorithms and technical analysis for 30 years and has been involved in option trading for 15 years. He holds a master's of science degree in Control Systems Science from Washington University at St. Louis. He has performed flight research for NASA and has worked on algorithms and programming for missiles at both Raytheon and Texas Instruments.

Jay Kaeppel is the Chief Market Analyst at www.JayOnTheMarkets.com. He was the head trader at a CTA for nine years and a trading software developer for 15 years. Kaeppel has had four books published on trading including The Four Biggest Mistakes In Option Trading *and* Seasonal Stock Market Trends: The Definitive Guide To Seasonal Stock Market Trading. *Numerous articles by Kaeppel have appeared in this magazine over the years.*

Further reading

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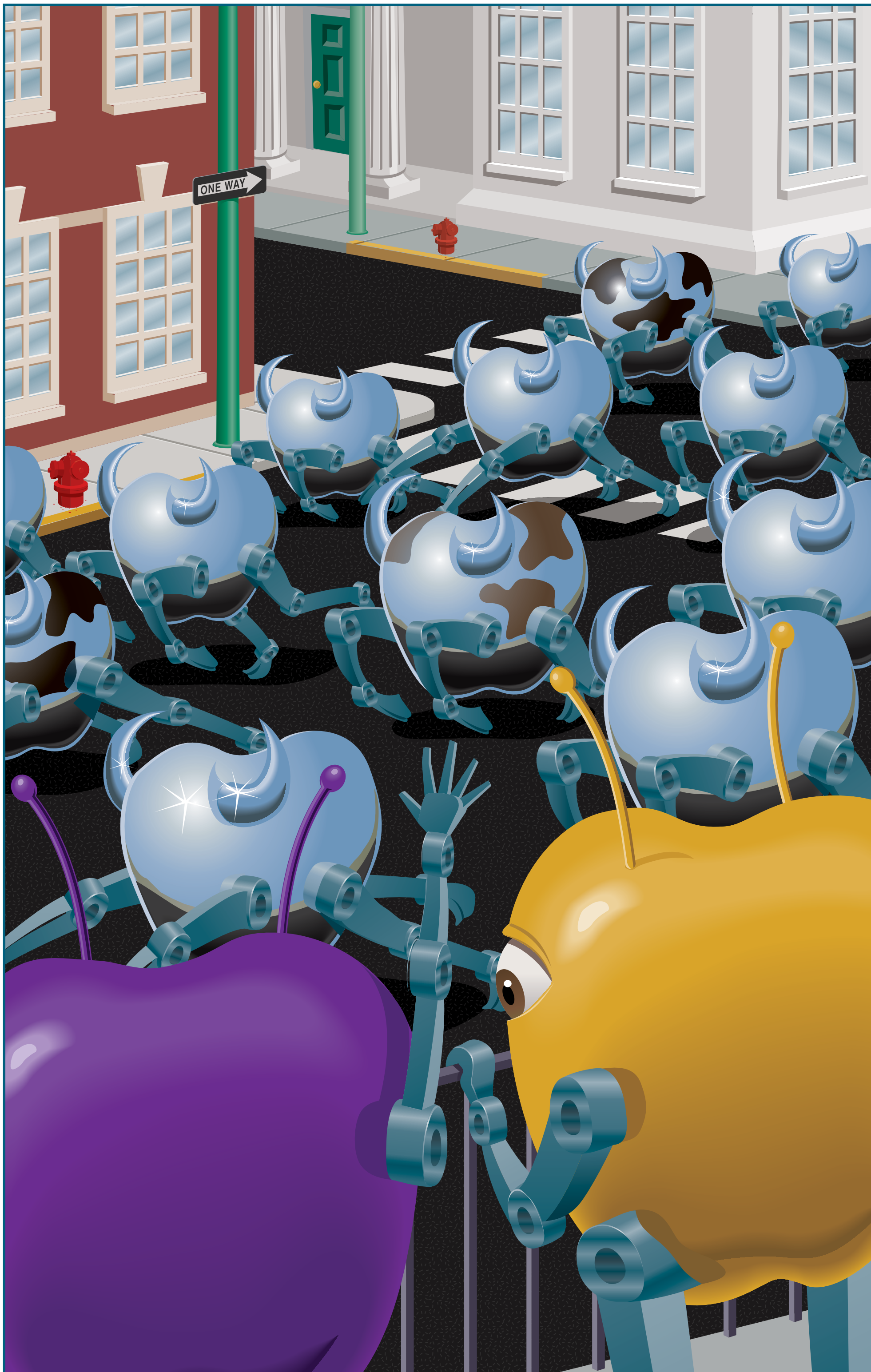
‡Optionsanalysis.com

‡See Editorial Resource Index



KEN SMITH

Connecting The Dots

Range Expansions & Contractions

Part 3

In this third and final part of a series that looks at expansions & contractions to gauge divergences, we look at how to apply the Chartmill bull indicator to trading.

by Dirk Vandycke

I started this series of articles by explaining the difference between extrinsic and intrinsic divergence. I then discussed how extreme percentage days tend to close near their extremes in the direction of the move. Any divergence from this is rare. Since these kinds of divergences tend to cluster, I take a running sum of them. This forms the backbone of the Chartmill bull and bear indicators. Strong trending days are measured relative to historical characteristics. The use of running percentiles instead of averages makes these indicators dynamic and adaptive, unlike other divergence indicators. In this final article of this series, I will discuss the usefulness and accuracy of the Chartmill bull and bear indicators using examples.

First things first

In parts 1 and 2, you saw that, under normal circumstances, a weak close near the low of the day tends to accompany a weak day showing a relatively large price drop. Likewise, strong closes near the high of the day appear to be strongly correlated with strong days and bring along a relatively big price appreciation. Any repeated deviation from that pattern spells a top in the latter case or bottom in the former.

As a consequence, the Chartmill bull and Chartmill bear indicator will become more accurate in the presence of increasing — not *increased* — volatility. According to backtested results, when this condition is met, the signals tend to be better in higher time frames. In addition, signals that were accurate earlier can be a precursor to the reliability of new ones. This means that the quality of results might depend on the equity at hand, so you may prefer taking signals on equities that showed favorable signals in the past.

Both indicators can be used successfully to pinpoint extremes as well as temporary reversals. The stronger an existing trend, the more reliable countertrend signals get in forecasting a reversal.

Finally, be aware that signals can come early. They almost never come late or just in time. Because of this, it's better to take entries with a trailing-entry stop than with market orders.

To reverse or not to reverse?

Although one of the major goals of divergence techniques in technical analysis is anticipating tops and bottoms, there's a difference in knowing when a price extreme is being created and seeing any sign of a follow-through reversal. Spotting divergences, however, doesn't necessarily have to be about countertrend trading. In fact, looking for good entries along an existing trend has proven to be successful when using the Chartmill bull and Chartmill bear indicators, even if the existing trend is in a higher time frame.

FIGURE 1: TIMING AND ACCURACY OF CHARTMILL BULL/BEAR INDICATOR. On this chart of Google, Inc. (GOOG), you can see how the Chartmill bull indicator generated few but effective buy signals in a long-term time frame. The buy signal in the middle was somewhat premature.

Take a look at the scenario in Figure 1. The chart shows about two and a half years of data for Google, Inc. (GOOG). Note that there are only three bullish signals, and all three of them indicated some of the strongest advances on the chart. In the last two occasions, they did very well in terms of timing; the signals appeared before the change in trend became clear. The second signal caught my attention around June 2012 at the bottom of a dip during a month of sideways price action. Since bottoms are an important place to look for divergences and I watch them closely, I entered a position in June. This gave way to a 63% price increase over the following year. Along the way, history repeated itself: In March 2013, there was another signal in similar circumstances. Since the original entry stock price for GOOG more than doubled, if you had just traded based on the last signal, it would have yielded a 70% profit.

This illustrates that the best divergences to look for may be during horizontal phases. In this case, the horizontal accumulation stage that took place after a downtrend nurtured the divergence, suggesting that it could be the last shakeout before the trend reverses. It was clearly a time to buy, although price didn't show this yet. When you evaluate a horizontal stage, keep in mind that the previous phase, whether up or down, may tell you the difference between an accumulation and a distribution horizontal stage.

Volatility may also provide clues about the nature of the horizontal phase you're studying. Higher volatility typically accompanies distribution phases. Unless proven otherwise, any bullish divergence signals of this kind should be seen as a continuation pattern which, if followed through by new highs, is a high-probability, low-risk setup. Up legs tend to be more aggressive and cover a greater price distance later on in an uptrend.

Of course, there's a catch to any late-stage signal. If you buy in anticipation of a breakout to new highs, there is a chance the breakout will not materialize. Just because the possibility is there doesn't mean that a positive outcome is probable. The best way to deal with this is to apply a purely technical entry by translating the anticipation into an entry stop order as soon as the signal shows up on the chart. The order will only get filled when the signal materializes into a real breakout. This way, you're not immediately reacting by entering a position as soon as the signal occurs. Think of it this way: *Each divergence signal in the direction of the major trend is deemed innocent until proven guilty.*

Since the indicators give early signals that are undetected, if you are just watching price action, your entry stop order can be a trailing one. This will give you a more favorable entry price, since your trailing stop will move as the dip extends prior to the eventual turnaround. This is the price you pay (no pun intended) for having a leading instead of a lagging indicator, and it's the main reason you have to play these setups by using trailing entry stops. It's a good tradeoff, because without the intrinsic divergences signaled by the Chartmill bull indicator (CBI), low-risk and high-probability opportunities like these would have gone undetected.

Countertrend trading

Since 2008, trend traders have experienced a few years of challenging — to say the least — market environments. During such times, countertrend and range trading naturally gain

FIGURE 2: INTEGRATING THE CHARTMILL BULL/BEAR INDICATOR AND TREND INDICATOR. Here you see how price continued to move after Figure 1 left off. This chart shows the importance of the interaction between the Chartmill bull/bear indicator signaling a divergence and any prevailing current trend.

The Chartmill bull/bear indicators can be used to pinpoint extremes as well as temporary reversals.

more focus. Detecting divergences is all about spotting tops and bottoms before it's too late, regardless of whether they announce the temporary short-term reversal of a trend or the change in course of a major long-term trend.

The Chartmill suite of indicators proves to be useful here also. In Figure 2 you see a chart of GOOG similar to the one in Figure 1, except this one zooms in on the area between the last two bull signals. What you need to watch for here, without going into all the details, is that during strong trends, countertrend signals — such as the two bearish divergence signals you see here — get stretched, losing much, if not most, of their accuracy. Nevertheless, they reached their highs well before price turned. The most useful signals become those where the Chartmill bear indicator reaffirms a first top, as shown by the short horizontal black lines. The final touch here is to make use of a trending indicator to interpret divergence signals as being countertrend or not. I've used the proprietary Chartmill trend indicator, but you can use any trending indicator. Look at how all signals in this chart started out as countertrend signals.

Wrapping up

Even though I have illustrated the use of the Chartmill bull/bear indicators through charts, backtests show that statistically, the Chartmill bull and Chartmill bear indicators are useful. Although backtests just show what would have happened in the past without guaranteeing future expectancy, utilizing these indicators wasn't derived from a few standalone examples. There is still room for further research. Given that both these indicators are available for charting and screening on Chartmill, I encourage you to give them a try and come up with unique ways of using them in your trading.

Dirk Vandycke has been actively and independently studying the markets since 1995 with a focus on technical analysis, market dynamics, and behavioral finance. He regularly writes articles and develops software, some of which is available at his co-owned website, www.chartmill.com. Holding master's degrees in both electronics engineering and computer science, he teaches software development and statistics at a Belgian university. He's also an avid reader of anything he can get his hands on. He can be reached at dirk@monest.net or via his website at www.chartmill.com.

Further reading

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‡Chartmill.com

‡See Editorial Resource Index

Explore Your Options

***Got a question about options?** Tom Gentile is the chief option strategist at Optionetics (www.optionetics.com), an education and publishing firm dedicated to teaching investors how to minimize their risk while maximizing profits using options. To submit a question for our Explore Your Options column, post it to our website at **http://Message-Boards.Traders.com.** Answers will be posted there, and selected questions will appear in a future issue of S&C.*

Tom Gentile of Optionetics

SELL IN MAY AND GO AWAY...

A lot of my students subscribe to and receive the *Stock Trader's Almanac* published each year by Jeffrey Hirsch. In this treasure trove, Hirsch and his father Yale Hirsch discuss seasonality and cyclical trends that have occurred in past years. They also look at the best time, historically, to be long or short the market and sectors during the course of the year. One of the approaches covered in the *Stock Trader's Almanac* involves the time-tested strategy "Buy in November, and go away (sell) in May." One of my students approached me recently and asked, "How can I effectively sell in May using options instead of shorting the stock or index markets?"

I believe the answer to this question is twofold: using options as a way to protect long stock positions, and using options as a way to speculate that a drop will occur in the markets. I will analyze each of these strategies against the SPDR S&P 500 exchange traded fund (SPY). SPY can be used to protect long positions that are correlated with the S&P 500 and also can be used to profit from a bearish market move.

Protecting with the SPY

Let's assume you have several long stock positions that correlate with the overall market. You are concerned that the six months starting in May could result in pullbacks in the market of 10%. Based on your analysis, you decide that buying SPY put options would cover most of your positions if the market were to drop. Your next task is to find the option strikes and time frame that best represent your analysis.

Time frame = Expiration date

If you follow the November–May–November strategy, then you are aware that from May to November the markets are usually weaker. Therefore, if you were to protect yourself with options, you will want an expiration date somewhere between October and November. Having this amount of time will cost more than a shorter-term option, but it allows you the benefit of having protection up to the time where you expect the market to outperform.

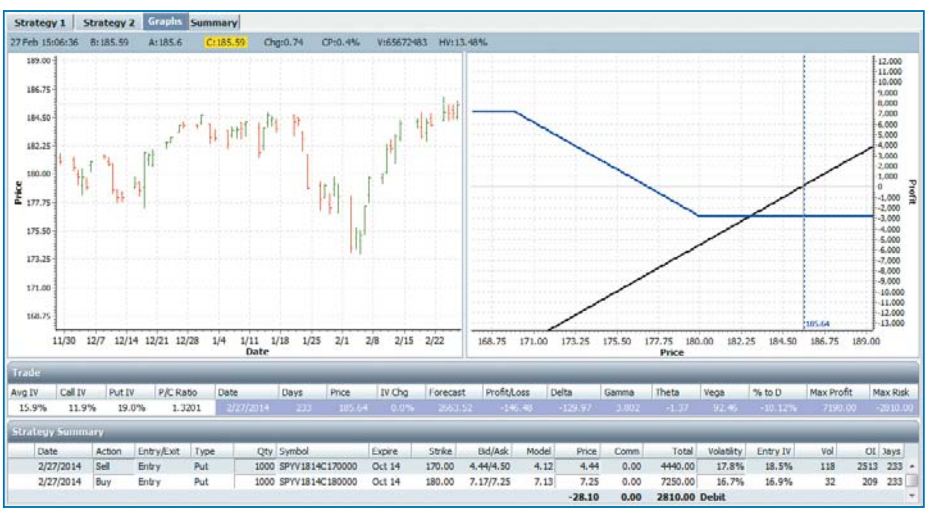
Protection price target = Strike price

If you are looking to protect your position over a predetermined amount of drop in the markets, than you will use that drop as your target. This will allow you to finance the price risk of options by spreading, since you are looking at buying put protection where the market currently is, and selling puts where you expect the market to drop. For instance, if you expect a 10% drop between May and November, you could buy puts near today's market levels, and sell an equal number of puts at your target price, or 10% lower.

An example

The chart in Figure 1 represents an SPY portfolio (black line), which largely represents the S&P 500 and moves up and down with the market. At the time of this graph, the portfolio was worth $185,480. You can protect this with puts; using put spreads will decrease the cost of protection but limit your downside protection. The protection shown is referred to as a bear put spread (blue line). This is a 180/170 put spread, buying 10 contract spreads for a cost of 28.10 or $2,810 of protection against the SPY portfolio. Note that this protection is in place until the SPY reaches 170 before protection caps out to the downside.

Remember, this is for protection against the long portfolio. If the market moves higher, you still profit from the long side of your portfolio and your only cost is the protection. If the market drops between the



OPTIONETICS

FIGURE 1: PROTECTING THE SPY PORTFOLIO. Here you see a bear put spread (blue line), which is a 180/170 put spread. This protection is in place until the SPY reaches 170 before protection caps out to the downside.

Continued on page 32

PHOTO COLLAGE: JOAN BARETT

There's No Rush

Wilder's RSI: Extending The Time Horizon

The relative strength index (RSI) is a popular indicator among traders, but how do you figure out how many price bars to include in its calculation, or how high is high, or how low is low? Here's one way to do it.

by Mike B. Siroky

In his 1978 book *New Concepts in Technical Trading Systems,* J. Welles Wilder described several new indicators, including the relative strength index (RSI). Since its introduction, the RSI has achieved widespread use and popularity among stock traders. Wilder himself pointed out some of the advantages offered by the RSI, the most important being a standardized scale of zero to 100.

However, two important questions need to be addressed when using the RSI:

1. How high is high and how low is low on the RSI?
2. How do you select the proper number of bars to use in calculating RSI for the time frame of interest to the trader or investor?

As to the first question, Wilder held the opinion that a value of 70 indicated a turning point to the downside in the near future. This signal would be strengthened if there was also a divergence between RSI and price. Conversely, an RSI value below 30 indicated a turning point to the upside in the near future, also strengthened by a divergence with price. The 70/30 levels are incorporated in most current trading platforms as the default values and often interpreted as overbought or oversold, respectively. However, Wilder himself never used the terms overbought or oversold. In fact, these terms only have meaning in a stock or market that is nontrending or oscillating in a range. Strongly trending stocks or markets, in contrast, can stay overbought or oversold for long periods of time.

As to the proper time horizon, Wilder suggested a 14-bar RSI and this is the default in most trading platforms. The reason Wilder selected 14 bars is unclear. Why not eight bars, 25 bars, or 55 bars? In my opinion, the most likely reason that Wilder selected 14 bars is that he was, at the time, a commodity trader. Despite the popularity of his indicators for stock trading, it is rarely noted that all the charts in his book are commodity charts such as silver contracts. There are no equity charts illustrating the use of RSI. Commodity traders typically have a short time horizon of perhaps four to six weeks, and 14 daily bars is half of a cycle of 28 trading days, which is about five and a half weeks. Whatever the reason, 14 bars is often not the best time horizon for many stock traders and investors. In this article, I discuss the effect of varying the time horizon on RSI confidence limits.

Notes on calculating RSI

Wilder gives the formula for RSI as:

Equation 1:

RSI = 100 – 100 / (1+RS) where RS is the ratio of:

$$\frac{\text{Sum 14-day period up days price change/14}}{\text{Sum 14-day period down days price change/14}}$$

This method does not calculate a true arithmetic average in arriving at the value of RSI. This is because if there are 14 bars of daily data, the number of up days and down days must sum to 14 and each will be less than 14. There might be, for example, eight up days and six down days. In this case, to obtain a true average, you would have to divide the sum of up changes by eight and the sum of down changes divided by six. The reason Wilder did not calculate a true average could have been because he wanted to use exponential smoothing and wanted to reduce the amount of price data. In actuality, RS is the ratio of the sum of up price changes to the sum of down price changes (SUMUP/SUMDN). This ratio is unchanged by dividing the numerator and denominator by 14. Since Wilder's RSI is based on daily closing price changes, it is a price momentum indicator.

Knowing that RS represents SUMUP/SUMDN, you can substitute it for RS in Wilder's equation as follows:

RSI = 100 – 100 / (1 + SUMUP / SUMDN)
= 100 * [(1 + SUMUP / SUMDN) – 100]
/ (1 + SUMUP / SUMDN)

Expanding the numerator gives 100 + 100 * (SUMUP / SUMDN) – 100. The 100 terms cancel out, so the equation becomes:

RSI = 100 * (SUMUP / SUMDN)
/ (1 + SUMUP / SUMDN)

Multiplying top and bottom by SUMDN gives you:

RSI = 100 * SUMUP / (SUMDN + SUMUP) or

Equation 2:

RSI = 100 * SUMUP / (SUMUP + SUMDN)

Determining the confidence intervals

Equation 2 shows that RSI is a ratio of closing price change occurring on up days divided by closing price change on all days. An RSI value of 75 means that 75% of all price changes took place on up days. This means you can convert an RSI of 75 to a probability of 0.75 and use the normal probability distribution to estimate various confidence intervals.

Confidence intervals are widely used in science, medicine, engineering, and many other fields. Suppose that in the normal population of the US, the mean systolic blood pressure is 120 mmHg and the standard deviation is 8 mmHg. For a normally distributed population, the 95% confidence interval would be 1.96 standard deviations on each side of the mean. For this example, the mean would be about 104 mmHg to 136 mmHg. This leaves 2.5% of the normal population outside the confidence intervals at each tail. If you take a random sample of 100 people and find that the proportion of subjects with systolic blood pressure > 136 mmHg is 0.35 or 35%, it is unlikely that this represents a sample drawn from the normal population.

To calculate the standard deviation of a proportion, you can use:

Equation 3:

Standard deviation (SD) = SQRT(p*(1–p)/n)

where:
p is the probability of an event occurring, (1–p) is the probability of the event not occurring, and n is the number of trials.

In the sample of 100 people, the 95% confidence interval (CI) is therefore 1.96 standard deviations on each side of the measured proportion of 0.35. The probability p is 0.35 and the probability (1–p) is 0.65. The standard deviation is therefore 0.048; 95% CI is then 0.257 to 0.443.

We already know that in normal individuals, the mean is 120 mmHg and the standard deviation is 8 mmHg. Therefore, about 2.5% of the population should have a systolic blood pressure of 136 mmHg or greater. P = 0.025 is far below the lower confidence limit of 0.257 and therefore the sample of 100 people is unlikely to come from a population with normal blood pressure.

I will apply the same procedure to RSI. You expect that for very large numbers of sampling (n > 10,000), RSI will be approximately 50, resulting in an expected value of 0.5. Say you measure a sample of 14 bars and find RSI = 65. Is this significantly different from the expected value of 50?

Using equation 3,

- Standard deviation (SD) = SQRT(p*(1–p)/n)
  = SQRT(0.5*0.5/14) = 0.134

- 95% CI RSI(14) is 0.50 – 1.96*0.134
  = 0.2374 [lower limit] and 0.50 +1.96 * 0.134
  = 0.7626 [upper limit]

In RSI terms, the confidence interval is 23.74 to 76.26.

Since the measured value of 65 is not outside the confidence interval, it is *not* significantly different from 50. Suppose you measure another sample of 14 bars and find RSI = 80. This is outside the confidence interval and is therefore likely to be

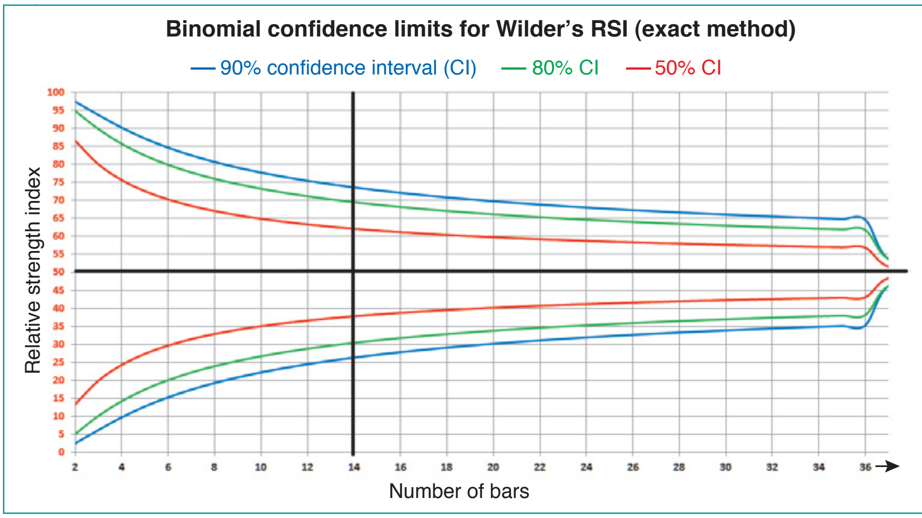


FIGURE 1: CONFIDENCE LIMITS. Here you see a graphical illustration of confidence limits for RSI according to the number of bars.

different from the expected value of RSI = 50.

Suppose you want to find the 90% confidence level (5% at each tail) instead of the 95% confidence interval for a 14-bar RSI. The 90% interval is bounded by 1.645 SD on each side of the expected value:

0.50 – 1.645 * 0.134 = 0.2802 or

RSI = 28.02 (lower limit)

0.50 + 1.645 * 0.134 = 0.7198 or

RSI = 71.98 (upper limit)

Any 14-bar RSI less than 28.02 or greater than 71.98 has a probability of $p < 0.05$ since at each tail, 5% of the distribution is outside 1.645 standard deviations from the mean.

To generalize, the 90% confidence interval (CI) for RSI for any number of bars *n* is:

Equation 4:

0.5 – SQRT(0.25/*n*)*1.645 (lower CI) and 0.5 + SQRT(0.25/*n*)*1.645 (upper CI)

N=BARS	90% Exact Conf	Binomial Interval	80% Exact Conf	Binomial Interval	50% Exact Conf	Binomial Interval
2	2.53	97.47	5.13	94.87	13.40	86.60
3	6.24	93.76	10.15	89.85	19.94	80.06
4	9.76	90.24	14.26	85.74	24.30	75.70
5	12.78	87.22	17.50	82.50	27.39	72.61
6	15.32	84.68	20.09	79.91	29.69	70.31
7	17.46	82.54	22.21	77.79	31.48	68.52
8	19.29	80.71	23.97	76.03	32.91	67.09
9	20.87	79.13	25.45	74.55	34.08	65.92
10	22.24	77.76	26.73	73.27	35.07	64.93
11	23.45	76.55	27.84	72.16	35.91	64.09
12	24.53	75.47	28.82	71.18	36.63	63.37
13	25.49	74.51	29.68	70.32	37.27	62.73
14	26.36	73.64	30.46	69.54	37.82	62.18
15	27.14	72.86	31.15	68.85	38.32	61.68
16	27.86	72.14	31.78	68.22	38.77	61.23
17	28.52	71.48	32.36	67.64	39.17	60.83
18	29.12	70.88	32.88	67.12	39.54	60.46
19	29.68	70.32	33.37	66.63	39.87	60.13
20	30.20	69.80	33.82	66.18	40.18	59.82
21	30.68	69.32	34.23	65.77	40.46	59.54
22	31.13	68.87	34.62	65.38	40.73	59.27
23	31.55	68.45	34.98	65.02	40.97	59.03
24	31.94	68.06	35.32	64.68	41.20	58.80
25	32.31	67.69	35.63	64.37	41.41	58.59
26	32.66	67.34	35.93	64.07	41.61	58.39
27	33.00	67.00	36.21	63.79	41.79	58.21
28	33.31	66.69	36.48	63.52	41.97	58.03
29	33.61	66.39	36.73	63.27	42.13	57.87
30	33.89	66.11	36.97	63.03	42.29	57.71
31	34.16	65.84	37.20	62.80	42.44	57.56
32	34.41	65.59	37.41	62.59	42.58	57.42
33	34.66	65.34	37.62	62.38	42.71	57.29
34	34.89	65.11	37.81	62.19	42.84	57.16
35	35.12	64.88	38.00	62.00	42.96	57.04
36	35.33	64.67	38.18	61.82	43.07	56.93

FIGURE 2: CONFIDENCE INTERVALS. Here you see the RSI limits for 90%, 80%, and 50% confidence intervals at various numbers of bars, from two to 36.

Varying the time horizon on RSI confidence limits will have an effect on your trading results.

Several conclusions are apparent:

1. You can calculate confidence intervals for RSI using 50 as the expected RSI value and calculating the standard deviation of that proportion.
2. The confidence limits depend on the number of trials or number of bars. *Increasing* the number of trials to greater than 14 *decreases* the confidence limits, while *decreasing* the number of trials to lower than 14 *increases* the confidence limits significantly.
3. As the number of bars increases toward infinity, the confidence limits converge on 50, as expected.

Figure 1 shows the confidence limits for various RSI bars. The 90% confidence limit is important because it leaves 5% at each tail, and this is the most widely accepted statistical standard of significance in a one-tailed test of hypothesis.

The table in Figure 2 gives exact values for the 90% confidence limits for various numbers of bars from two to 36. These exact values differ slightly from results

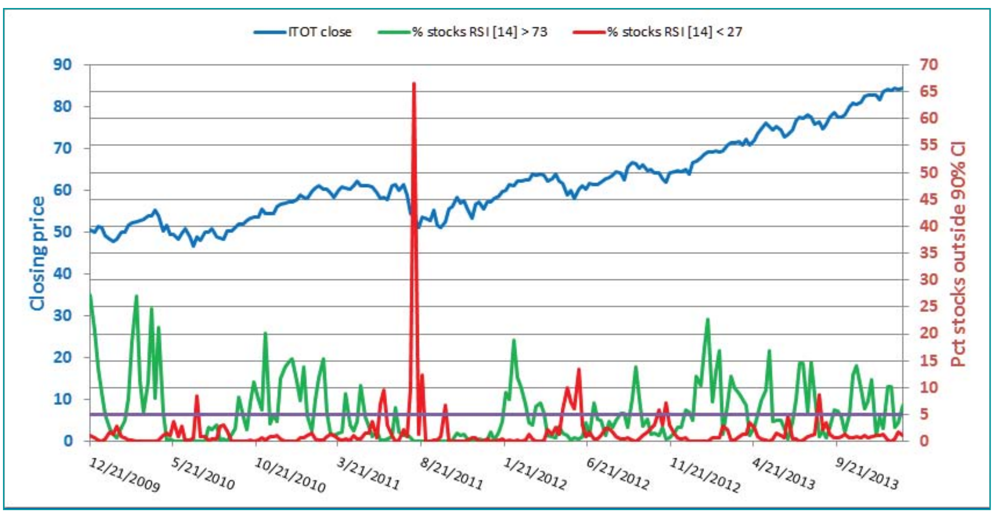


FIGURE 3: RESULTS OF BACKTESTING RSI AT 14 BARS. The percent of stocks above and below the confidence interval are shown for the iShares Trust S&P 1500 (ITOT).

calculated with Equation 4 for values of n < about 30. Values for bars greater than 36 can be calculated using Equation 4. As can be seen from Figure 1, a 14-bar RSI has a 90% confidence limit at slightly less than 27 and slightly more than 73. These values are close to Wilder's 70/30 limits and mean that, in a neutral market environment, slightly more than 5% of days will be above 70 and slightly more than 5% will be below 30. For RSI = nine bars with 90% confidence limits, you would have to expand the RSI confidence limits to 21 and 79. Similarly, for RSI = 25 bars with 90% confidence limits, the RSI limits are about 32 and 68.

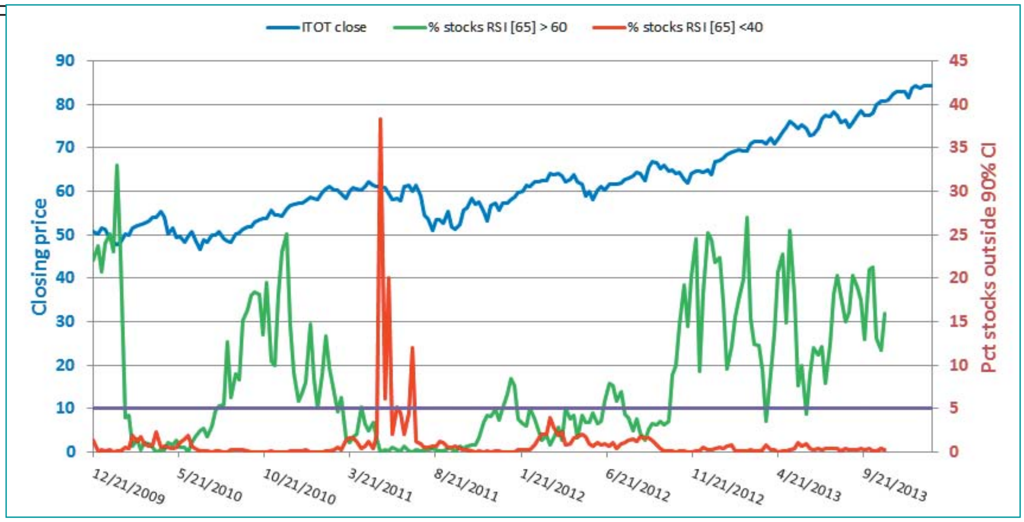
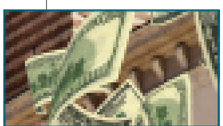


FIGURE 4: RESULTS OF BACKTESTING RSI AT 65 BARS. Here you see the percent of stocks above and below the confidence interval for ITOT.



BACKTESTING

Using the universe of stocks in the S&P 1500, I wrote a scan to run on StockChart.com's scan engine with the following code:

[group is SP500] or [group is SP600] or [group is SP400] and [RSI(n) < lower limit]

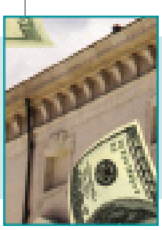
or

[group is SP500] or [group is SP600] or [group is SP400] and [RSI(n)> upper limit]

where n is the number of bars and the upper and lower limits are the corresponding 90% confidence limits.

The scan was run on Monday of each week for approximately the last four years or about 200 weeks. In an unbiased market and with a large-enough sample, you should find about 5% of the stocks above the upper confidence limit and 5% below the lower limit. This means that, on average, after multiple samples, you would find about 75 stocks at each end of the confidence interval. If not, you may be dealing with a sample that is different from normal. Let us see how the real world compares to the theoretical construct.

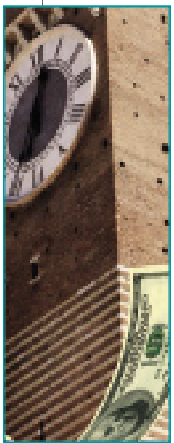
In Figure 3 you see the results graphically as the percentage of 1,500 stocks for RSI = 14 bars. The mean percent of stocks outside the upper limit during this 202-week period was 5.14% and the median value was 3.5%. For the lower confidence limit, the mean percent of stocks outside the limit was 1.74% with a median value of 0.7%.



The RSI limits can be derived statistically for any number of RSI bars.

In Figure 4 you see the results graphically as the percentage of 1,500 stocks for RSI = 65 bars for the same 202-week period. For the upper confidence limit, the mean was 8.35% and the median value was 5.07%. For the lower confidence limit, the mean was 1.04% with a median value of 0.4%.

Clearly, the market was biased to the upside during this period, which extended from March 15, 2010 to the present. This is shown by the finding that on average, more than 5% of stocks were above the upper confidence limit for 14 bars and 65 bars while far less than 5% were below the lower confidence limit for both 14 bars and 65 bars.



Keep on adjusting

Trader, author, and trading-psychology expert Alexander Elder mentions in his book *Trading For A Living* that adjusting the RSI limits so that the indicator will spend approximately 5% of the time above or below these limits. He suggests readjusting these limits every four to six months. Rather than using an empirical approach, the limits can be derived statistically for any number of RSI bars as I have shown here. The technique I have discussed in this article extends the time horizon of the RSI indicator without giving up its intrinsic ability to measure stock momentum on a standardized scale.

Mike B. Siroky, MD, is a retired surgeon living in Scottsdale, AZ. He has more than 25 years of investment experience and is particularly interested in analyzing technical indicators to improve their predictive value. He may be reached at mike.siroky@yahoo.com.

Further reading

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Explore Your Options

Continued from page 27

FIGURE 2: BEARISH SPECULATION. Here you are long SPY 180 puts and short 170 puts, but you are not protecting anything. You are taking a position that will profit if the underlying (SPY) were to drop below 177.19 by the October expiration.

current price and 170, the puts will cover any losses in the underlying. Anything below 170 is not protected because the spread caps any downside profits against the underlying loss. If you want more downside protection, either you can buy more put spreads or widen the strikes that are being bought and sold.

Bearish speculation

There is not much difference between buying puts or put spreads for protection or speculation. The main difference is you're not covering a long portfolio; you're interested in making money if the market drops. So let's look at the same position but without the long asset (Figure 2).

In this example, you would be long the SPY 180 puts and short 170 puts, but you are not protecting anything. You are taking a position that will profit if the underlying (SPY) were to drop below 177.19 by the October expiration. If the "sell in May and go away" strategy works, you have the potential to make a maximum profit of better than 200% on risk. The SPY would need to be at or below 170 by the October expiration for this to happen. The risk on the trade, as with any vertical debit spread, is limited to the amount paid.

Benefits of protection

Whether you look at an option position to protect the underlying stock or portfolio or you are looking to profit from a downside move in the markets, remember these rules:

1. *Spot an opportunity:* Have a reason for buying the puts or put spreads. Thinking that the market is going down isn't good enough; if it were, everyone would be trading options.

2. *Create an acceptable-risk trade:* This is different for every trader, but evaluate what you believe to be the best position for your risk-and-reward tolerance.

3. *Plan, execute, and manage the trade:* Entering a trade doesn't mean it's going to move according to your plan. Be prepared to adjust or exit the trade if the underlying moves in a direction you had not anticipated.

4. *Most important, get educated!* It's better to educate yourself with books, materials, or seminars than to get educated by hard knocks in the markets.

‡Optionetics.com


Don Bright of Bright Trading

SINCE YOU ASKED

Confused about some aspect of trading? Professional trader Don Bright of Bright Trading (www.stocktrading.com), an equity trading corporation, answers a few of your questions. To submit a question, post your question to our website at ***http://Message-Boards.Traders.com****. Answers will be posted there, and selected questions will appear in a future issue of S&C.*

TRADING SETUPS

Mr. Bright, I often hear the term trade setups *and have read a few articles that purport to show good setups. However, when I take away the part that talks about the good portion of the setup, I see things that are ambiguous to me. In several cases, the same setups could have, and actually did, go very badly. In your experience, are there really such things as setups with quantifiable results? My group tends to rely on these things, and yet I seem to be the only one making money. I don't make much, but I don't lose, either. Any help would be appreciated.*

Oh boy, did you ever hit a hot button with this one. I will do my best to be as discreet and restrained as possible. In my history, so many setups are touted after the fact, much like showing off the fish you caught, without sharing the number of wasted hours and money on the fish you did *not* catch. I guess another parallel would be the horse-race bettor who brags about the wins, but tears up the losing tickets. (Note: Please, no emails on this; trust me, I understand the psychology of this type of thinking).

For many, trading is nothing more than a bunch of *if–then* statements, at least in their minds. As this thinking applies to most instruments, I'll just use stocks in my examples. You might ask your friends, "What is a good stock setup?" Or, "When should I buy this stock?" The responses will likely vary from "If it breaks out of its 250-day moving average (MA), then buy it with both hands," to, "If earnings beat the street, then have your hand on the buy button." And, of course, the good old, "My backtesting has *proven* that if this happens, then the resulting move will be favorable." There are many other similar mantras that you're likely to hear; I've probably heard 90% of them over the years.

Here is where it gets a bit tricky. Our firm *does* do some amount of teaching, geared for those who want to take their trading seriously. We point out many factors that help in determining entry and exit points. We are quick to point out that a real trader must always remember that *common sense must prevail* in any trade. I don't want to say, "If it looks too good to be true, then it probably is." But I guess I did anyway.

> **Fundamentals tell you *what* to buy or sell, and technicals tell you *when* to buy or sell.**

Serious traders look at many factors in determining their trades, and they keep track of all their trades, good and bad. This diary of sorts will be the best way to obtain future profits and limit future losses. It's nice when you see something that looks familiar and can repeat the positives while staying away from the losses. So what should you rely on? Don't *rely* on anything.

I will try to give you the short version of what many of our people do in preparation for their trading day. First off, we rarely let the *stock of the day* or the *news of the day* dictate what we should be involved in. We tend to predetermine groups of stocks, baskets, and correlated pairs that we have already done the homework on. I've seen so many new traders jump on the proverbial bandwagons — and get run over by it.

We keep databases of hundreds of stocks, and have dozens of columns of information on each symbol, and each pair (which is one of our favorite strategies; I outlined this approach in a previous column here). We review as much information as possible on each symbol and pair, based on current chart patterns and fundamental data.

In my opinion, fundamentals tell you *what* to buy or sell, and technicals tell you *when* to buy or sell. We then teach our traders to overlay in their mind, or even on their spreadsheets, overall market conditions. Where are we in the *monthly seasonality?* What is the *premium or discount to fair value?* Are we in new territory or have we seen this movement before? Check all the news (prior to the market), and have alerts on your active trades pop up on one of your screens.

I could go on and on, but I want to close by saying that we are in a business of percentages. Many say they understand that, but I must emphasize that we are thrilled to be right 60–70% of the time, and when we're wrong, we bite the bullet, take the loss, and go on. We limit our market risk by keeping ourselves hedged at all times, except for the short time it takes to offset a trade based on market movements.

I'll close by saying *don't become your own worst enemy.* Have faith in your ability to gather this information in a timely manner, and execute the trade.

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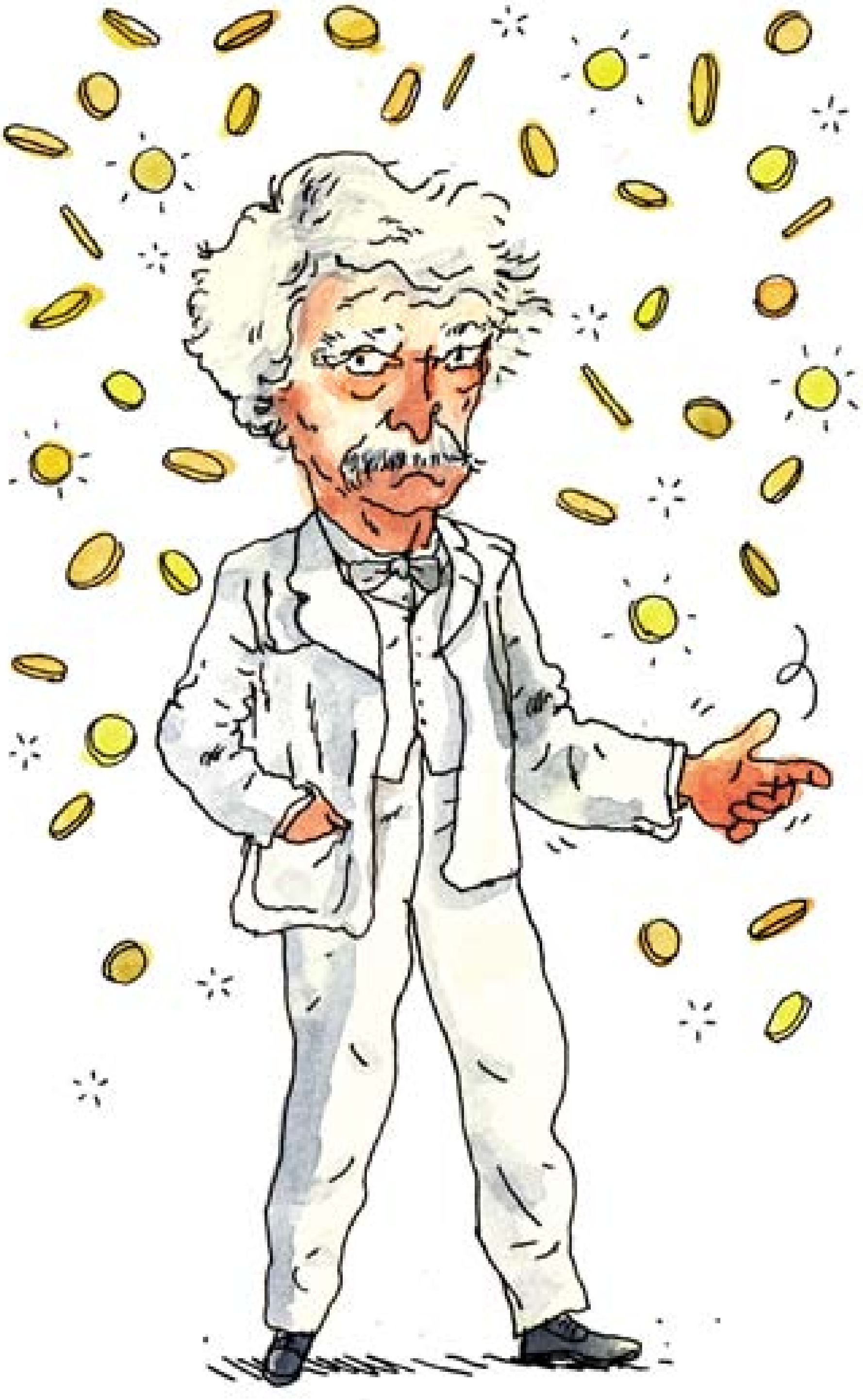


VICTOR MARCHAND KERLOW

Darn Those Deviations!

The Real Reason Traders Lose Money (And What To Do About It)

Why do traders lose money? The answer may surprise you. Here's a look at the core of the problem and how you can arrive at a profitable strategy.

by John F. Ehlers and Ric Way

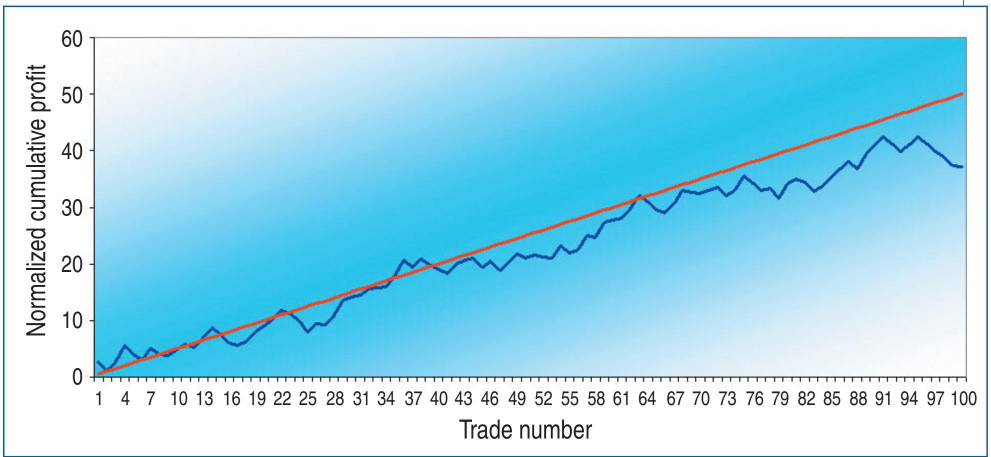
Most traders lose money. The reasons given cover a myriad of excuses, from poor self-esteem to poor risk control to just having the wrong trading system. While any of these may contribute to poor performance, they don't go to the heart of the matter. In this article, we will demonstrate the core of the problem using a pure mathematical approach.

We will not only show you the problem, but we'll also show you mitigating techniques that don't stress your capitalization requirements or your workload to arrive at a profitable trading strategy. In fact, depending on how you currently trade, your analysis workload can be significantly reduced.

Is trading gambling?

To answer this question, we need to first define gambling and who the winners and losers are. In Las Vegas, there is no question that the house is invariably the winner. How else can they afford all the neon lights and attractions? They win because the odds of the game are in their favor. Take a simple roulette bet as an example. The roulette wheel has 36 numbers. Half are black and half are red. If you bet on red or black, the payout is 1. That would make it a fair game, all other things being equal. However, in American roulette there is also a green "0" pocket and a green "00" pocket. These two extra pockets are neither red nor black. Having two pockets that are *neither* red nor black changes the odds to be 1.111-to-1 that the house will win. Of course, there are lots of other bets that can be placed, but each of those bets will have a payout combination, and the odds of hitting that combination will be in favor of the house. Even with small odds, based on the payout and percentage winners, the house ultimately will win over a large number of bets. That is their advantage. The casinos are open 24/7 and cover a huge number of bets.

Let's take the perspective that trading is analogous to *gaming* (not gambling). In evaluating trading



MICROSOFT EXCEL

FIGURE 1: SIMULATION RESULTS AS EQUITY CURVE. Here you see a typical equity curve for a system where the profit factor equals 1.5 and percent winners is 60%.

performance, *profit factor* is the ratio of gross winnings to gross losses. In this sense, profit factor is analogous to the payout in gaming. *Percent winning trades* is exactly the same as *percent winners* in gaming. Therefore, since you know the profit factor and percent winning trades, you have all the necessary tools to statistically examine trading performance.

By examining trading performance statistically as a random process as you would in gaming, you have eliminated a wide range of causality, such as the vagaries of a particular trading system, trading psychology, and market conditions such as efficiency or trends. Only profit factor and percent winning trades enter into the analysis. This is the advantage of the gaming perspective.

The gaming analysis

It is possible to perform the gaming analysis in an Excel spreadsheet. The basic idea of the spreadsheet is that column A consists of independent random numbers that vary between zero and 1. Starting at row 5, each row in column B contains a conditional statement that holds that if the random number is equal to or less than the probability of a winning trade, we will assign the profit of the trade to be the profit factor in column C. Otherwise, if the random number is greater than the probability of a winning trade, we assign the profit of the trade to be -1 in column C. Then, all we have to do is calculate a running sum of profits in column D, and column D becomes our statistical equity curve. The parameter, *percent winners*, is entered in cell B1 and the parameter *profit factor* is entered in cell B2. This positioning enables the entire spreadsheet to be recalculated for user-selected values of the parameters. In addition, the entire spreadsheet can be recalculated for a given pair of parameters multiple times just by pressing the F9 key for each recalculation.

The average profit per trade is defined by the *gross winnings* less the *gross losses* divided by the total number of trades. With a little algebra, which is shown in the sidebar "Computing The Average Trade," the average profit per trade is also equal to the profit factor minus 1 multiplied by 1 minus the percent winners. The cumulative profit per trade is plotted along with the randomized equity curve as a reference of relative performance.

Fine-tuning the simulation

Gaming provides a fixed payout and a known loss. *Trading* is different because each winning trade is likely to have a different profit, and the amount of the loss is also variable with each trade. The trading situation is more closely simulated by having the trade profit randomized and having each loss randomized. This randomization is done such that the average winning trade value is still the profit factor and the average loss is still -1. The process is to randomly assign a loss between zero and -2. The trade profit is randomly assigned a value between zero and twice the profit factor. In sheet 2 of the workbook, in cell B5, for example, the conditional statement becomes =IF(A5<B1/100, RAND()*2*B2, -RAND()*2).

Figure 1 shows the results of the simulation as an equity curve taken over 100 trades. If you assume you have a swing trading

COMPUTING THE AVERAGE TRADE

Avg. trade = T

$$= \frac{\$W - \$L}{\#W + \#L}$$

$$= \frac{(\$W / \$L) - 1}{\#W + \#L}$$

$$= \frac{PF - 1}{(\#W + \#L) / \$L} = \frac{PF - 1}{\dfrac{(\#W + \#L) \times \#L}{\$L \times \#L}}$$

and, since $\dfrac{\$L}{\#L} = 1$

$$= \frac{PF - 1}{(\#W + \#L) / \#L}$$

$$= (PF - 1) \times (1 - \%)$$

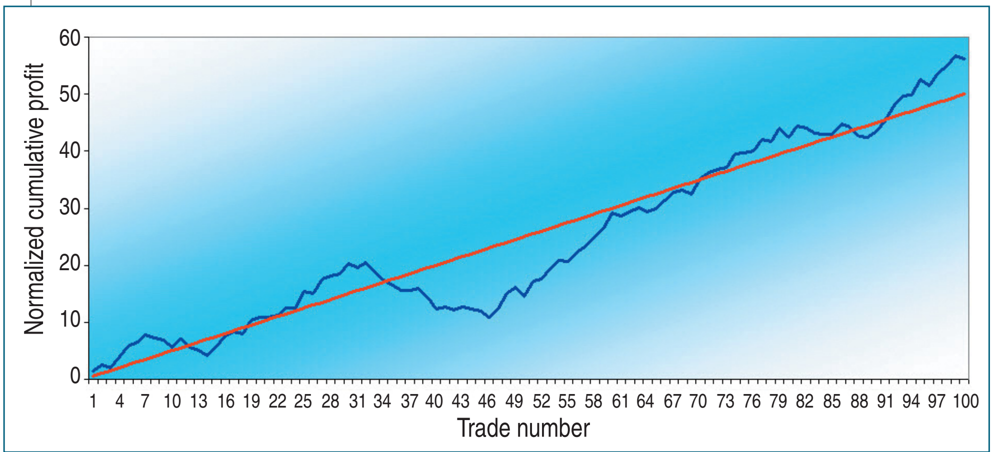


FIGURE 2: ANOTHER EQUITY CURVE. Here you see another equity curve for a system where the profit factor equals 1.5 and percent winners is 60%.

The real question is why most traders lose money when the payout and percent winners are so heavily in their favor.

system that trades about twice a month, this would represent about four years of trading. The assumed values were profit factor = 1.5 and percent winners = 60. These values represent a pretty good trading system, where the trades are taken out-of-sample. (Using in-sample data is just plain cheating). The normalized average profit per trade is 0.5, and the red line is the cumulative profit if you assumed you made the average profit on each and every trade. The red line is simply a reference for the randomized simulated equity curve shown as the blue line.

You get a new equity curve for the same input parameters each time you press the F9 key. This way, you can create multiple track records for what amounts to be the exact same trading system because you are using the same descriptive parameters.

The real question is why most traders lose money when the payout and percent winners are so heavily in their favor.

HERE'S WHY TRADERS LOSE MONEY

By pressing F9 again, you can create another typical equity curve, as shown in Figure 2. This time, the equity curve shows a substantial drawdown between trade 31 and trade 60. If the chart represents four years of trading, the drawdown period extends for more than a year! Further, the deepest part of the drawdown is about 20% of the net profits garnered over the entire four-year period. As a practical matter, no trader is equipped to stay with the system through this period of adversity. The trader is undercapitalized and gets wiped out or gets discouraged and moves on to another system, where the process is probably repeated.

These results can easily happen even when using a good system. Imagine what the results can be with a lower-quality system having, say, a profit factor of 1.3 and 55% winners. You can replicate the results yourself by entering the parameters in a spreadsheet and repeatedly pressing F9.

The important thing to remember is that bad things can happen even to good trading systems. We have dispassionately described a series of random events in the trading process that are devoid of trading psychology or the technology involved in placing the trades, whether it be discretionary or algorithmic. The underlying problem is not that the track records are wrong; the problem is that we are dealing with only a few samples in a basically stochastic process. For example, it is not uncommon to get three or four heads in a row in a fair coin flip, even though the probability of getting a head on any given flip remains at 50%.

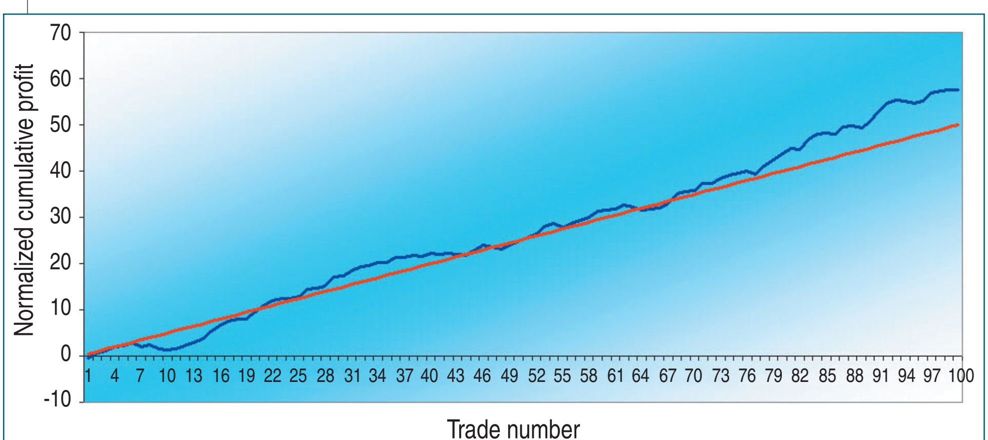


FIGURE 3: FOUR-CHANNEL PORTFOLIO. Here you see a typical equity curve for a four-channel portfolio using a system where the profit factor is 1.5 and percent winners is 60%.

STATISTICS TO THE RESCUE

Any trader would be delighted with his trading system if he could just make the average profit per trade on every trade. The problem is that sometimes there is a large deviation from the mean. The objective is to reduce that deviation from the mean.

If you double the number of statistically independent members in an ensemble, the deviation of the ensemble is reduced by the square root of 2. Therefore, if we increase the members of the ensemble by 4, you cut the deviation in half.

Bingo! That's how you do it. If you simultaneously and continuously trade four symbols in independent *channels* such that you enter a new trade in each channel after closing out the previous trade, you have approximated the conditions of halving the deviation. In other words, the four channels are traded asynchronously. There might be some questions about the trades being statistically independent, but for practical purposes, it's close enough. All you have to do is divide the total capitalization equally among the four channels, and you have therefore put no more stress on capitalization requirements. If you're trading the ES (emini S&P 500 index futures contract), we suggest that the diversification be accomplished by also trading the NQ (emini NASDAQ 100 futures contract), YM (emini Dow), and TF (mini Russell 2000 index) futures in your portfolio.

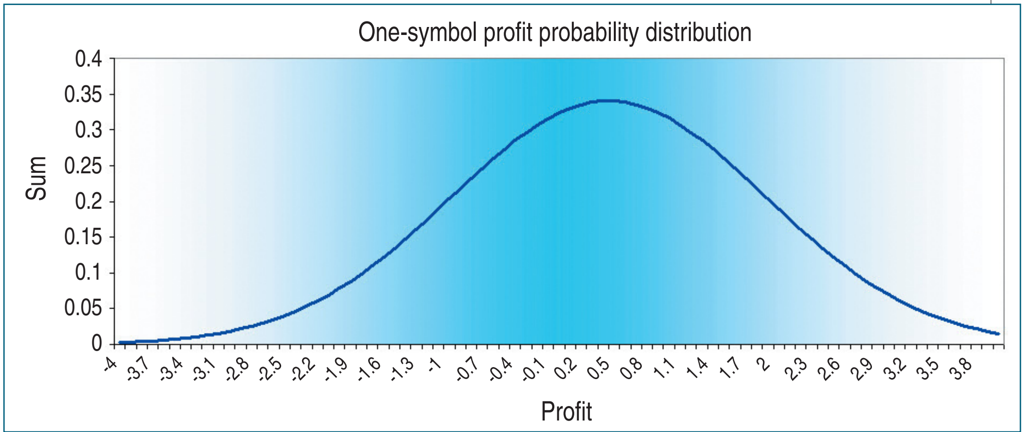


FIGURE 4: PROBABILITY DISTRIBUTION FOR ONE SYMBOL. Here you see the probability distribution of a trading system with a profit factor of 1.5 and percent winning trades of 60% when serially trading a single symbol.

When we continue our simulation to include the four-channel portfolio, using the same 1.5 profit factor and 60% winning trades, we get the results from sheet 3 of the workbook similar to what you see in Figure 3. Note the normalized cumulative profit per trade is still 50 after 100 trades; the same average profit is maintained. The key feature is that the randomized equity curve for the portfolio is dramatically smoother. All you need to implement trading like this is a reliable source of trade timing signals.

You can, of course, extend the process. For example, you could halve the deviation again by increasing the portfolio to 16 channels. However, this introduces several real-world problems. First, your workload to carry 16 simultaneous channels effectively would be dramatically increased. Second, you would be required to divide your capitalization 16 ways. This would stress the available capital for most folks. Finally, there would be some serious questions about whether all 16 channels carried could be statistically independent.

UNDERSTANDING STATISTICS

As the saying popularized by Mark Twain goes: "There are three kinds of lies: white lies, damned lies, and statistics." Evaluating trading systems necessarily and unfortunately involves all three cases. We have seen that equity curves do not truly represent real-world trading situations. Further, a relatively good system can have a good track record over one set of data and a bad track record over another set of data, regardless of market conditions.

We feel the best statistical description of a trading system makes use of a Monte Carlo analysis with the results presented as a bell curve. For example, Figure 4 shows the bell curve when a system having a profit factor of 1.5 and 60% winners is computed over approximately 1,000 trades. Figure 4 is computed on sheet 4 of an Excel workbook. This bell curve gives you a good estimate of the most likely profit you can expect, and you can easily estimate your long-term prospects for breakeven or better. When interest rates are low, as they are these days, the Sharpe ratio is just the average profit divided by the deviation. All these are easily computed from the randomized trading results.

Figure 5 is computed on sheet 5 of the Excel workbook. In this case, it is clear that the most likely expected profit is about the same as when serially trading a single symbol, but the deviation is approximately halved. Since the mean profit is constant and the deviation is halved, the Sharpe ratio for this simulated trading is approximately doubled.

Performing a Monte Carlo simulation in a real-world situation is done differently than in a theoretical spreadsheet.

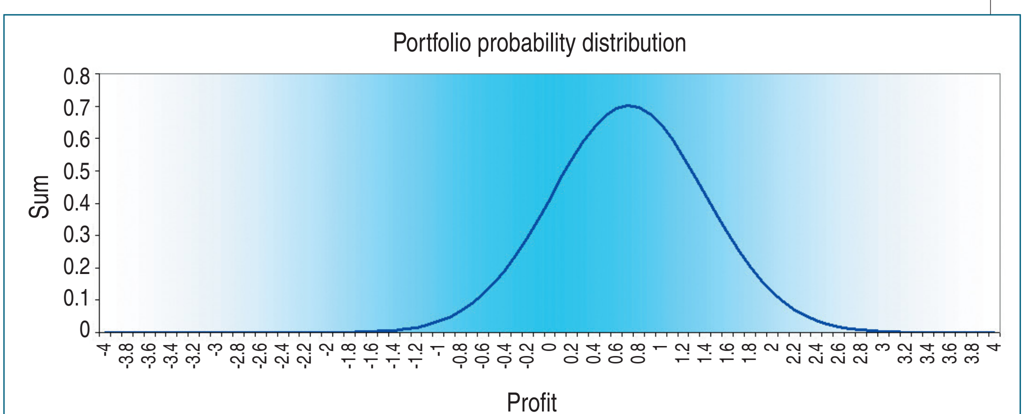


FIGURE 5: PROBABILITY DISTRIBUTION FOR A PORTFOLIO. Here you see a probability distribution of a trading system having a profit factor of 1.5 and percent winning trades of 60% when trading a portfolio of four symbols.

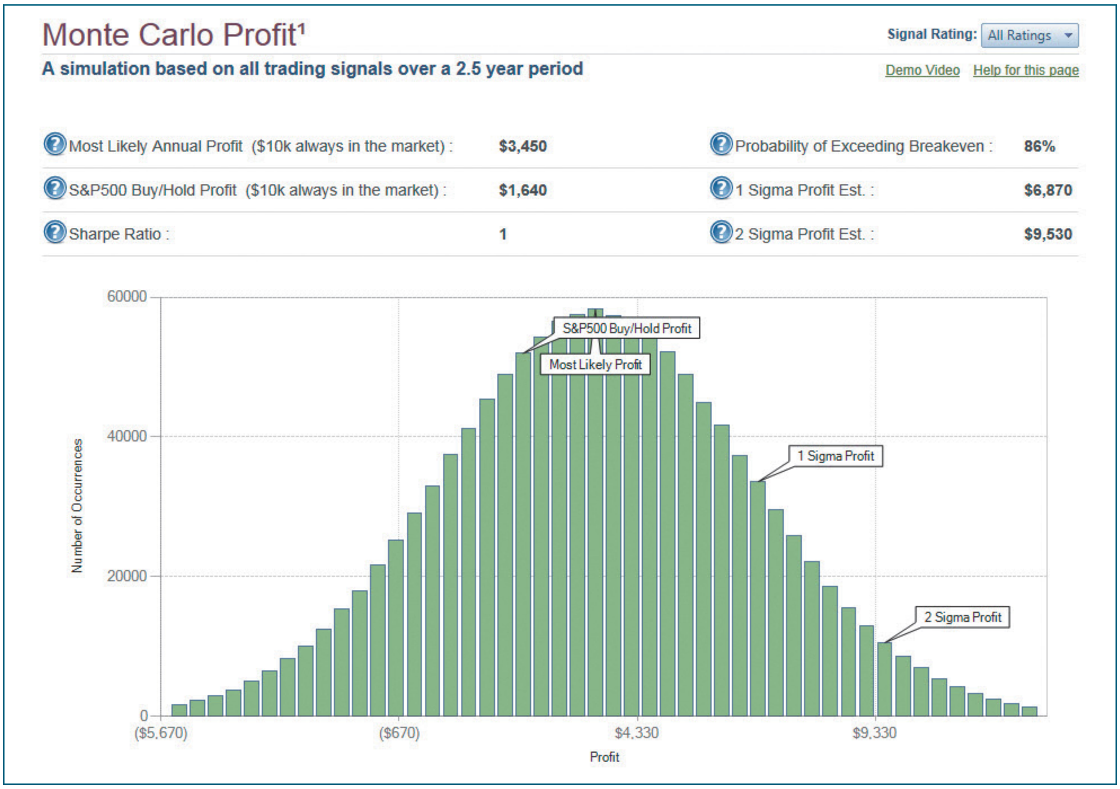


FIGURE 6: MONTE CARLO BELL CURVE. Here you see the annualized Monte Carlo bell curve when serially trading single symbols based on $10,000 being continuously invested.

At our website, www.StockSpotter.com, we take all the trades we have called over approximately the last three years and compute a profit-per-day for each. We put all these profits-per-day into the proverbial hat and randomly draw them out 250 times (digitally, of course). This simulates randomized trading for one year. Then we repeat the annualized draw 5,000 times to simulate 5,000 years of trading using the data from the trades we have called. Then we bin the annualized results to create the bell curve shown in Figure 6.

The annualized return on a continuously invested $10,000 is 34.5%. You can conjecture the probability of breakeven or better when trading a portfolio of four symbols by halving the deviation of the bell curve. In addition, the Sharpe ratio would be nearly doubled to be approximately 2, which is an outstanding performance result.

Less stress, less pain

Most traders lose money because they are experiencing just a few samples of a trading system that may have excellent statistics in the long run. The situation is about the same as getting tails several times in a row in a coin-flip exercise. These losses are not due to poor psychology, unique market conditions, or a poor trading system. Traders lose because they have an adverse experience and lose their initial capitalization, or lose confidence in their trading system, or possibly switch to another trading system, where they again encounter another adverse experience.

From a statistical perspective, about the only solution for improving your trading experience is to trade a portfolio of symbols because that will reduce the deviation from the mean profit. We suggest dividing initial capitalization into four independently traded channels. There are diminishing returns when trading a larger number of channels, both in terms of stressing your initial capitalization and by increasing your workload.

S&C Contributing Editor John Ehlers is a pioneer in the use of cycles and DSP techniques in technical analysis. He is the author of the MESA9 program, is the chief scientist for StockSpotter.com, and is the inventor of SwamiCharts.

Ric Way is an independent software developer specializing in programming algorithmic trading systems in C#. He may be reached at ricway@taosgroup.com.

Further reading

Ehlers, John F. [2014]. "Predictive And Successful Indicators," *Technical Analysis of* Stocks & Commodities, Volume 32: January.

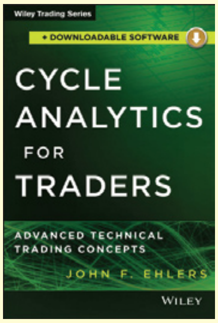
_______ [2001]. *Rocket Science For Traders,* John Wiley & Sons.

_______ [2013]. *Cycle Analytics For Traders*, John Wiley & Sons.

Ehlers, John F., and Ric Way [2010]. "Zero Lag (Well, Almost)," *Technical Analysis of* Stocks & Commodities, Volume 28: June.

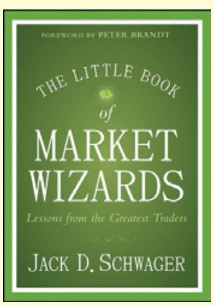
BOOKS FOR TRADERS

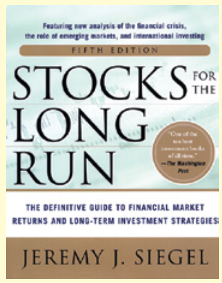
The following selection of book descriptions represents a sampling of recent book releases in the investing field. Books described here may be from some of the major book publishers as well as some independent book publishers. These are not critical reviews or editorial evaluations, but rather a brief look at the book marketplace to help keep readers up to date on new or recent book offerings.



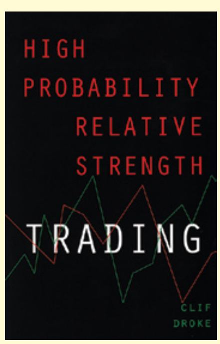
Cycle Analytics For Traders: Advanced Technical Trading Concepts + downloadable software (256 pages, $125 hardcover, $84.99 ebook, 2013, ISBN 978-1-118-72851-2) by **John F. Ehlers**, published by Wiley. This is a technical resource for self-directed traders who want to understand the scientific underpinnings of the filters and indicators they use in their trading decisions. Using his years of research, Ehlers presents solutions for achieving effective trading results based on a pragmatic approach with an emphasis on simplicity rather than mathematical purity. The book helps traders to think of their indicators and trading strategies in the frequency domain, not just in the time domain. This viewpoint can help traders to select the most efficient filter lengths for the task at hand. The book includes discussions of spectral dilation; normalizing amplitude swings; filters; new indicators to analyze cycles; and using transforms to improve the display and interpretation of indicators. [*Editor's note:* See Ehlers' and Rick Way's article elsewhere in this issue.]

The Little Book Of Market Wizards: Lessons From The Greatest Traders (208 pages, $22.95 hardcover, $10.99 ebook, 2014, ISBN 978-1-118-85869-1) by **Jack D. Schwager**, published by Wiley. Jack Schwager has spent the past 25 years interviewing legendary traders and investors, resulting in his four prior *Market Wizards* books. In this new book, Schwager presents a distillation of what he considers the essential lessons he learned in conducting nearly four dozen interviews with some of the world's best traders. The book delves into the mindset and processes of highly successful traders, providing insights that readers may find helpful in improving their own trading skills. What traits, behaviors, and philosophies sets the average investor apart from Market Wizards? Schwager explores this question for the reader. [*Editor's note:* See the **Trade News & Products** section of this issue for information about Schwager's planned next book.]



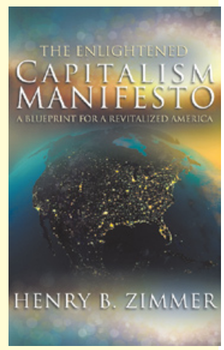


Stocks For The Long Run, fifth edition (448 pages, $40 hardcover/ebook, 2014, ISBN 978-0-07-180051-8) by **Jeremy J. Siegel**, published by McGraw-Hill. This new edition of *Stocks For The Long Run* addresses the role of emerging markets (China, India) and international investing as the basis for diversification. Because the last edition was published before the 2006 financial crisis and ensuing bear market, in this edition the author provides an analysis of the subprime crisis and resulting worldwide recession. The book answers questions such as how did the financial crisis alter the financial markets and the future of stock returns? What are the sources of long-term economic growth? How does the Fed affect investing decisions? Can stocks still provide 6–7% return per year after inflation? Should you hedge against currency instability? Siegel, a professor at the Wharton School of the University of Pennsylvania, offers details of market performance since 1802 to offer a case for market stability and the viability of long-term investing. He presents research to support his strategies for how to create the best long-term stock investment portfolio.



High Probability Relative Strength Trading (140 pages, $29.95 softcover, 2014, ISBN 978-0-9792572-4-7) by **Clif Droke**, published by Publishing Concepts/ClifDroke.com. In this book, the author highlights those opportunities for maximizing gains he believes are available in the market, especially given the point of the bull market at the time of his writing. To help traders and investors know when to buy and when to take profits, he provides a simple technical system for both up and down moves in the stock market, a system he uses for his Momentum Strategies Report service. The book also presents several indicators the author uses to help predict breakouts. Topics include relative strength; market internal strength; advance-decline line; Hi-Lo alert indicator; short selling; sector divergence; relative volatility; support & resistance; trendlines; channels; and gold.

The Enlightened Capitalism Manifesto, A Blueprint For A Revitalized America (310 pages, $15.95 softcover, 2013, 978-0-615-90479-5) by **Henry B. Zimmer**, self-published. In this book, the author compiles an integrated but controversial framework of economic and political reforms he believes will solve America's domestic issues. He promotes social responsibility to help level both the financial and political playing fields. He addresses the issues of political corruption, greed, and the injustices of the financial markets, proposing measures to more effectively regulate bankers, lawyers, lobbyists, and problematic pension programs. The fourth chapter covers reforming the financial markets. In other chapters, he makes recommendations for job creation programs as well as reforms to the US taxation, education, and healthcare systems. He discusses what he feels are inflation myths and provides guidelines for personal financial planning. The book is structured to be interactive with the reader, incorporating reader surveys alongside Zimmer's arguments. Results are compiled at his website, www.enlightenedcapitalism.us.



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From One Bar To The Next

Swing Trading With Sylvain Vervoort

Sylvain Vervoort's career started with Bell Telephone, which was in those days an ITT-owned telecommunications company. As a support engineer for private communication systems in export sales, he was introducing systems and training people in many parts of the world. He later moved onto CERBERUS, a Swiss security company bought by Siemens in 1998, where he was responsible for product management. There, he was involved with computers and software since the early days of microcomputing after the invention of the transistor computer and the birth of the Intel 8008 microprocessor.

His first computer was a homemade copy of the Tandy TRS80 (which was made by Radio Shack) with the maximum allowable amount of memory for the time — 48 KB of RAM. He has always been fascinated by computer hardware, computer programming, and later on, technical analysis of the stock market. His book Capturing Profit With Technical Analysis, *published by Marketplace Books, received the AXIOM Business Books Awards bronze medal in 2010. His DVD* Ground-Breaking Band Indicators *includes an autotrading expert system. We have published a couple dozen articles by him in this magazine, including a popular seven-part series last year on indicator rules for a swing trading system. Many of his S&C articles over the years have received our Readers' Choice Award in the "favorite articles" category, as voted on by S&C readers. You can follow his weekly technical analysis of the S&P 500 index and the forex pair EUR/USD at his website, www.stocata.org.*

STOCKS & COMMODITIES Editor Jayanthi Gopalakrishnan interviewed Sylvain Vervoort via email in mid-March 2014 about how to profit from swings in the markets.

Swing trading in the direction of the trend with clear entry points is good practice for making consistent profits.

Sylvain, tell us about how you got interested in technical analysis.

The European Option Exchange (EOE) was founded in 1978 in Amsterdam as a futures and options exchange. I believe it was 1979 when an enthusiastic stock trading colleague at work talked to me about the possibility of trading options. He convinced me that this was the place to be — make a lot of money with little starting capital.

With a group of other colleagues, we gathered some 400,000 Belgian francs (some 10,000 US dollars) to start an option investment club. I was going to make the trades based on technical analysis, and everybody would become rich in no time! A few months later, the money was gone. Luckily, we continued our meetings at a nearby Chinese restaurant, so it wasn't all sad.

Since then, I have been on what seems to be a never-ending quest to find the ideal way of trading the stock market based purely on technical analysis. After completing an investment and credit advisor course, I conducted many courses and presentations about technical analysis and options. The best thing about presenting a course is that as a teacher, you learn the most; many thanks to all who have attended my courses!

You use specific candlestick patterns, chart patterns, indicators, and so on. How did you come up with these patterns and indicators?

It all started with trying to find out if all those standardly available indicators on their own or in combination were giving consistent long-term positive results. My findings, I am sorry to say, suggested that they were not.

After some time, I realized that most indicators could be modified to show better results. That was the next step — developing a large number of my own indicators.

These modifications mostly involved some way of smoothing the indicators to remove input noise as much as possible. For example, I wouldn't use closing price data but instead would use smoothed data like a typical price or a heikin-ashi average closing price.

Recently, filtering out as much input noise as possible, I am using range bars and modified renko bars. Let me show what I mean by telling a bit more about the difference between a standard

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A CONFERENCE *AND* A VACATION!

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SPEAKERS

John Murphy
Chief Technical Analyst
StockCharts.com

Alexander Elder
Author
Trading for a Living

Martin Pring
Author
Technical Analysis Explained

Join us for an amazing line up with several "titans" of the technical analysis universe. In addition to hearing their presentations, you'll be able to meet and spend time with each of them throughout the conference.

- Richard Arms, Expert, Inventor of the Arms Index
- Chip Anderson, President, StockCharts.com
- Arthur Hill, Sr. Technical Analyst, StockCharts.com
- Greg Schnell, Technical Analyst, StockCharts.com
- Erin Heim, Technical Analyst, DecisionPoint
- Tom Bowley, Technical Analyst, InvestEd Central
- Gatis Roze, Author, The Trader's Journal
- Bruce Fraser, Professor, Golden Gate University
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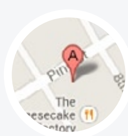
THE VENUE

We've moved ChartCon to the Grand Hyatt hotel in downtown Seattle. This is a larger venue in a better hotel with more dining and entertainment options!



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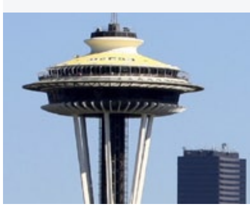

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candlestick chart, a range bar chart, and a modified renko chart.

How about starting with standard candlestick charts?

Steve Nison was the first to present Japanese candles to the Western world.

FIGURE 1: STANDARD CANDLESTICK CHART

FIGURE 2: RANGE BAR CHART

The candlestick chart has a fixed time setting on the *x*-axis a 10-minute EUR/USD chart, that is, each bar is of a 10-minute duration. Note how periods of very little price change are alternated with short-term volatile large price moves. This makes it difficult to draw trendlines, and an indicator like the stochastic RSI is not that easily applicable, moving up or down when there are only small moves and mostly late in reaction with sudden large moves.

What about range bar charts?

They were developed by Vicente Nicolellis, a Brazilian trader and broker. In Figure 2 is a 10-tick (5 pips) EUR/USD range bar chart. Range bars take only price into consideration; therefore, each bar represents a specified movement of price, not of time.

The range bar chart in Figure 2 has approximately the same start and end time as the 10-minute candle chart in Figure 1, but there is a big difference in appearance. The price move of the range bars is much smoother, resulting in much better and more predictable indicators. Drawing trendlines 1 and 2 on the 10-minute chart was not useful, but it worked well with the range bars. Trendlines 3 and 4 give better results on the range bar chart. Trendlines 7 and 8 can be drawn easily and are profitable on the range bar chart but not on the 10-minute chart.

And modified renko charts?

Renko charts, developed by the Japanese, were likely named after the Japanese word for bricks, which is *renga*. As with range bars, renko charts take only price into account. A renko chart is constructed by placing a brick in the next column once the price surpasses the top or bottom of the previous brick by a predefined number of ticks. It is important to know that gaps larger than the brick size will be automatically filled with additional virtual bricks.

This basic renko chart looks nice. Unfortunately, no wicks are shown, and remember, gaps are filled with virtual bricks. This means that the opening or closing price of a bar may not be where you think it is. This is especially confusing using historical backtesting or real-time trading, opening a position after a buy or sell signal at the opening price of the following bar. Your profit and loss calculation will just not be correct. Buying after a gap up will not be at the beginning of the gap. Instead, it will be at the end of the gap with a price difference the size of the gap.

That is why you need a modified renko bar chart like the one in Figure 3, giving correct opening and closing prices and possibly a wick. Note that with the standard modified renko chart similar to the one I am using in Figure 3, the problem of gap filling still exists.

However, when trading forex or futures with a 24-hour notation, the problem will be limited. But if you are using a notation with gaps, for example, if you trade forex during regular US trading hours only, the best thing to do is show the gaps in the chart. Most of the (larger) gaps will be at the daily session breaks.

You can imagine that indicators based on the charts without gaps will be different from those based on charts with gaps. Since I am now using mainly modified renko charts for my trading, I am not looking for candlestick patterns, because they do not apply, and a number of chart price patterns are not applicable with the modified renko bars. My chart template just uses one indicator, and that's a fast and slow stochastic RSI.

I do, of course, use standard technical analysis tools such as passive and active support & resistance levels; inclusive levels created by Fibonacci projections & retracements; and I look at daily pivot points with real-time intraday charts.

Because I am used to counting Elliott waves, they are still in the back of my mind when I look at waves. However, since writing "The 1-2-3 Wave Count," which you published in this magazine in

FIGURE 3: MODIFIED RENKO CHART

Oftentimes, a continuation of the trend will be confirmed with a hidden divergence.

the June 2013 issue, I mainly use that count to distinguish waves. In fact, I am working on an update of this wave count.

That's good to hear. Look forward to hearing more about it when it's ready. How do you select the stocks you wish to trade?

To trade stocks, I look at a weekly and daily chart to find those with a history of large moves over longer time periods. This stock selection is a manual process to find a limited number of stocks that I want to trade. If I find more stocks than needed, I would look at the daily moves and keep those with the highest average percentage value obtained using the following formula:

(High – Low) / (Low + (High – Low) /2) * 100

Next, I would avoid stocks with a history of little price change over longer time periods, very high intraday volatility, very high daily volatility, and regular, big surprise moves.

I stopped trading stocks some time ago, deciding to concentrate mainly on intraday trading the emini S&P 500 futures contract (ES) and the forex market. I tried this on some volatile stocks and exchange traded funds (ETFs). But the problem for an individual trader is that the more instruments you trade, the more difficult the followup.

My opinion is you have to limit the number of instruments you trade, because even with a small amount, you still need to automate at least part of the trading process. Otherwise, you will miss trade opportunities and you will more easily make mistakes. I now trade the ES futures and the EUR/USD, GBP/USD, and GBP/JPY forex pairs.

What type of process do you go through before making the decision to enter a trade?

I use the same basic chart template for trading forex and the ES. The ES eight-tick modified renko chart in Figure 4 is constructed with this template. This template allows manual and full automated trading based on a strategy expert system. So the process I go through to make a buy decision is pretty much a standardized process.

The modified renko chart is color-coded by an expert system. Bars are green for a long position and black for a short position. Price moves within a volatility channel — denoted by the thicker magenta lines — and a faster, smaller channel, denoted by the thinner magenta lines. This is my *band indicators expert system*. Active support & resistance is based on 50- (blue), 100- (green), and 200- (red) period simple moving averages.

Above and below the 50-period average (dotted light blue line), I use the same average but on the high and low price instead of the closing price. The trading strategy will use these lines as a longer-term reference to trade with the trend when there is a basic buy or sell signal from the expert system. The lower window has a fast and slow stochastic RSI indicator. It will give short- and longer-term information in relation to overbought or oversold conditions. The strategy also adds buttons in the upper toolbar that allow switching between manual and automatic trading and provides a number of practical tools.

Looking at Figure 4, you see that, longer term, the index is moving in an uptrend, the averages are moving up, and after a swing reaction down, there is an expert buy signal around 14:37 (green bar). Since the closing of the bar is above the 50-period average of the low price, it will be accepted by the strategy and if in autotrading mode, an automated buy signal will be sent to the broker (together with a wider stop and target order). If the strategy is not in autotrading mode, you

FIGURE 4: EIGHT-TICK MODIFIED RENKO CHART OF EMINI S&P 500 FUTURES CONTRACT (ES)

will have to decide if you want to take the trade or not using all available technical analysis techniques that may help you make the best possible decision. If you miss the first entry, you can use the light blue zigzag line to enter the trade after any short-term retracement (the green up arrows). This zigzag is based on a pullback retracement algorithm.

Relying on the expert, if I were trading automatically, I would sell when the first black bar was evident on the chart. At that point, note that the ES was already in a trading range (horizontal brown bars). If I were trading manually I would probably wait and see what is coming next because there is support from a previous top and the 50-period average. At the last bar shown on the chart, the automated system would open a short position.

I must mention that the strategy I used permits me to draw support, resistance, and trendlines acting as automated buy or sell signals either at a stop or limit price. That allows me, for example, to close a trade at a price target automatically or to open a trade at a limit price.

You can say that the process I am going through to place a trade is either fully automated, semi-automated to open or close a trade, and a manual followup based on technical analysis or a manual process when I am in front of the screen. Specifically in forex trading, I am looking at a forex economic calendar to avoid trading when important events may create extreme volatility.

Tell us about swing trading — what is it and how does it differ from other types of strategies?

A larger up or down move is called a trend, which is composed of a number of up or down swings. The swings will have small pullbacks, which will mostly retrace no more than 50% of the previous swing in the trend. I would say that 80% of the time, the next swing in the direction of the ongoing trend is started

FIGURE 5: DAILY CHART OF S&P 500

after the swing pullback.

Let's look at a daily chart of the S&P 500 index (Figure 5). In the second half of November there was a start of a longer-term uptrend move. In an uptrend, there are higher bottoms and higher tops. The start of the uptrend is confirmed with the first higher bottom in January 2013, with price finding support on a smaller, previous pullback. From that point, the next swing up is started. A good entry point to capture the next swing up is when the previous top of December 2012 is broken. The index moves up until the second half of February, when the next pullback correction is started. This correction brings price down to the level of the active support of the 50-day green simple moving average (SMA).

Again, you can use the break of the previous top to enter the next upswing. Notice from the chart in Figure 5 that several times, price bounces off the previous resistance line of the February top. With this support and the support of the 50-day SMA, a last upswing begins. Stops to be used with swing trading on a daily chart can be in the order of 5% to 15% depending of the volatility of the underlying instrument.

VERVOORT'S VERY FIRST HOMEMADE COMPUTER

What are the benefits of swing trading?

Basically, you trade swings in the direction of the larger trend. This increases your chance of making a profit. Swing trading, even on a daily chart, requires stop-loss settings of around 10%. But compare this stop to a buy & hold strategy, where you would use stops of around 25%. I would think that for most people, the swing trading stop of 10% would be more acceptable. It would be difficult to take a 25% loss, since you may end up with a very large loss from which you may never recover.

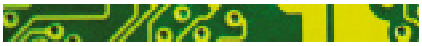
It's almost impossible to always enter and exit at tops and bottoms of swings. What indicators or patterns do you use to identify entry and exit points of the swings?

I think most traders have learned that there is no such thing as *always* in trading. But using appropriate technical analysis techniques, we can take advantage of these techniques, making profits at the end of the day. Let's look again at Figure 5.

From the beginning of the uptrend, you could have drawn a historical Fibonacci projection using the historical top of September. This gives targets at 161.8% and 261.8%. At the 161.8% projection, you can see a longer-term consolidation phase. When price reached the 261.8% projection, you do not know if this is the end of the uptrend, but given the size of the up move and that it reached a Fibonacci price target, that is enough to consider taking a profit. Next, you would wait to see how far the reaction goes.

The first leg of the reaction finds support on the resistance of a previous top. What you can see now is that the pullback reaction is larger than the previous ones, and the next move up does not break above the last top, that is, the uptrend didn't continue. When the previous bottom is broken, you can assume that the uptrend changed to a downtrend.

Swing trading in the direction of the trend with clear entry points is good practice for making consistent profits. I use just one indicator, a stochastic RSI, to find overbought and oversold price level confirmation. A trend reversal will



almost always show a positive or negative divergence between price and this indicator. And, oftentimes, a continuation of the trend will be confirmed with a hidden divergence.

Once you enter a trade, what techniques do you apply to manage your positions? Why is it important to manage positions once you are in a trade?

I use a number of different tools to handle open trades. The first action is automatically executed after opening the trade. A larger emergency stop order and a larger profit target order will be set automatically. This stop and target is set at the broker's level and is visible to the market. What is important is that these orders will be executed even if I lose control as a result of a broken PC or Internet connection, or so on.

I use a smaller stop based on technical analysis levels and a target limit that will be executed only when this smaller technical stop or target is reached. The nice thing is that these levels are not visible in the market. It is purely under the control of the strategy that is running on my PC. I also have the possibility to set a manual stop and target price, which I can adapt at any moment.

The next level is an automated trading expert that will close the trade automatically when the expert sell signal appears. Or it may open a new opposite trade automatically if a new buy signal appears. It is, of course, possible to manually open or close any trade without interrupting the running strategy. And the strategy will change the original stop level at the broker's level once a breakeven price change is reached.

Finally, I can draw support, resistance, or trendlines. A crossing of these lines will create either a buy or sell signal. They can be set up either as stop or limit price levels. That way, I can automatically close or open a trade based on the breaking of a trendline or, for example, reaching a Fibonacci price target or retracement level. All settings are compatible, and the one generating the first signal wins.

With all these possibilities programmed, you can understand that it is important to manage open positions and have all tools at your fingertips to act fast and from different angles.

How do you handle emotions when they arise while you are trading?

I assume most people, including myself, have minimal problems dealing with emotions when opening a trade. Either I use clear entry rules or a trade is opened in full auto mode.

Closing trades is a different story. What do I do if I start having any doubts about holding a trade or closing it? I look at support levels and the possible loss involved. With the help of the tools for handling open trades, which I mentioned previously, I will set stops and targets with the help of these tools or act manually immediately if I think further waiting makes no sense. From that point, I will no longer look at the screen or at least look at it without emotion.

What also helps is taking profits. Once there is a level of profit, I will try to take profit at the level of some smaller resistance level and reenter the trade at a small reaction, one that is sufficient to recover the cost of closing and opening a new trade. I do this because it always feels bad to see a profit turn into a loss, with bad emotions as a result.

Thank you for sharing your thoughts with us, Sylvain.

FURTHER READING

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_____ [2013]. "Indicator Rules For Swing Trading Strategies, Part 1," *Technical Analysis of* STOCKS & COMMODITIES, Volume 31: April. (Parts 2–7 appeared subsequently in May–November 2013.)

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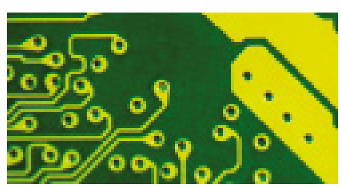
‡NinjaTrader (NinjaTrader, LLC)

‡See Editorial Resource Index



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The Swelling Bank Reserves

Do You Believe In Magic?

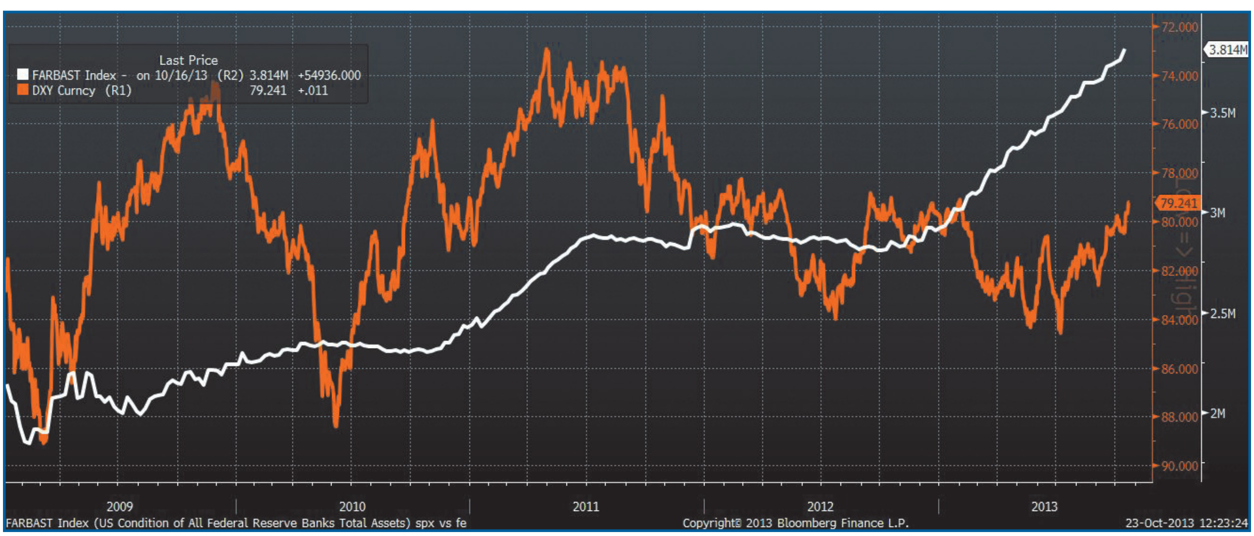
How reliable is the link between the Fed's balance sheet and US equities? Find out here.

by Brent Donnelly

...I worry about the effects on the long-run stability and efficiency of our financial system if the Fed attempts to substitute its judgments for those of the market. Such a regime would only increase the unhealthy tendency of investors to pay more attention to rumors about policymakers' attitudes than to the economic fundamentals that by rights should determine the allocation of capital.

—Ben Bernanke, October 15, 2002

Quantitative easing (QE) is a fairly new development in the financial markets. Hence, analysts should be open-minded and maintain healthy skepticism when it comes to attributing causal links between the size



BLOOMBERG FINANCE

FIGURE 1: QUANTITATIVE EASING AND THE US DOLLAR. The decline in the dollar during most of 2009 encouraged the viewpoint that quantitative easing would lead to a depreciation of the dollar. But then, very quickly, the relationship (if there ever was one) between the US dollar and the Fed's balance sheet fizzled.

Ben Bernanke photo: Albert H. Teich / Shutterstock.com COLLAGE / NIKKI MORR of the Federal Reserve's balance sheet and the level of various financial asset prices and inflation. In contrast to such healthy skepticism, the market has generally tended to adopt a religious fervor around QE and then quickly abandon that fervor once the empirical evidence fizzles. There have been many examples of this since 2008.

QUANTITATIVE EASING AND ASSET PRICES

First, the market believed strongly in 2008 and 2009 that US QE would lead to a substantial depreciation of the US dollar. The announcement of QE1 in March 2009 encouraged that viewpoint as the US dollar cratered for most of 2009. But then, very quickly, the relationship between the US dollar and the Fed's balance sheet (if there ever was one) fizzled (Figure 1).

There are ways of formatting the US dollar vs. QE chart where you show the change in the balance sheet vs. the change in the US dollar that fit a bit better than the chart in Figure 1. But we are five years into the QE experiment and the US dollar is mid-range even as the Federal Reserve's balance sheet has gone from \$1 trillion to \$4 trillion and continues to increase at a pace of \$85 billion per month. So the market gave up on the US dollar/QE link and moved to a new narrative.

"All this money printing will push gold to the moon!" was the new theory. And that narrative worked, until it didn't. In Figure 2 you see the type of chart that was commonly circulated in 2010, 2011, and 2012. Then suddenly, what you see in Figure 3 happened.

Today, the chart looks like Figure 4. Did the correlation flip, or what? Maybe there never was a correlation. Perhaps,this was purely psychological. And then the psychology broke.

Nobody has a good explanation for why gold broke down in 2013 even as the Fed's balance sheet continued skyward. I know the theories behind the gold drop (Fed tapering, US economic rebound, and so on); however, we never got taper, the US economy never rebounded, and yet here we are \$550 off the highs while

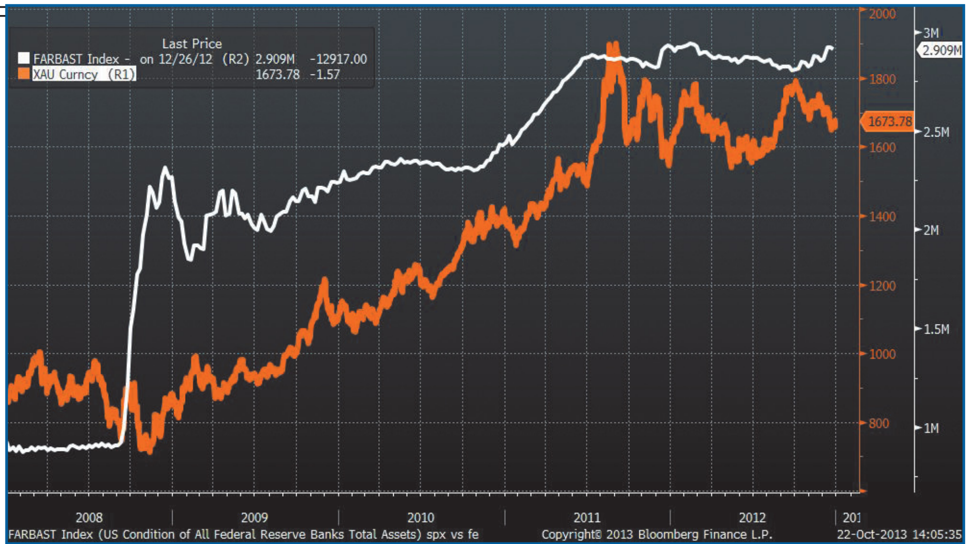


FIGURE 2: GOLD VS. FED BALANCE SHEET. The value of gold rose in 2010, 2011, and most of 2012.

FIGURE 3: IT IS NOT ALWAYS THE CASE. Here you see that in spite of the increase in the Fed balance sheet, the price of gold fell in 2013.

FIGURE 4: IS THERE EVEN A CORRELATION? Judging by this chart, there probably is no correlation.

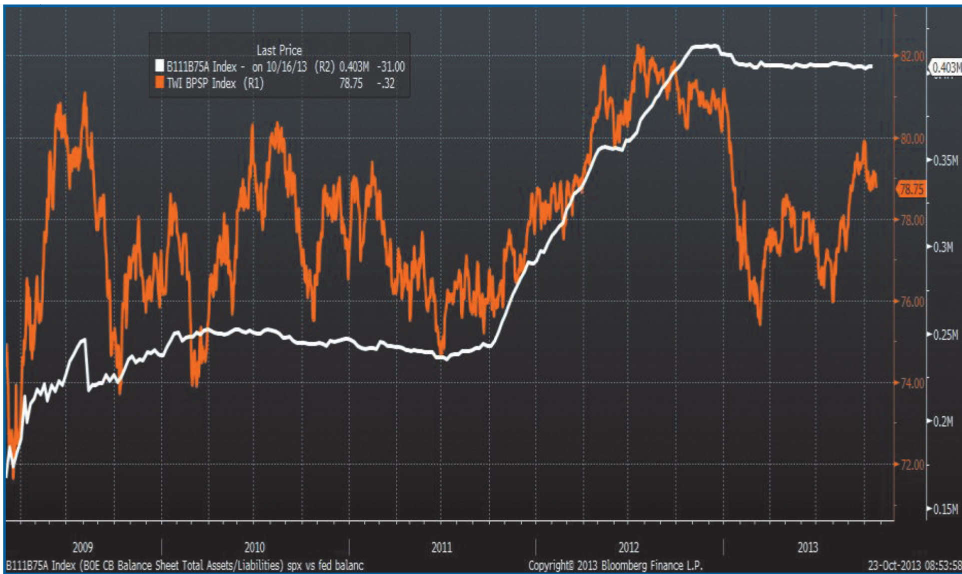


FIGURE 5: QE VS. BRITISH POUND. It looks like the more QE out of the UK, the more the pound rallied.

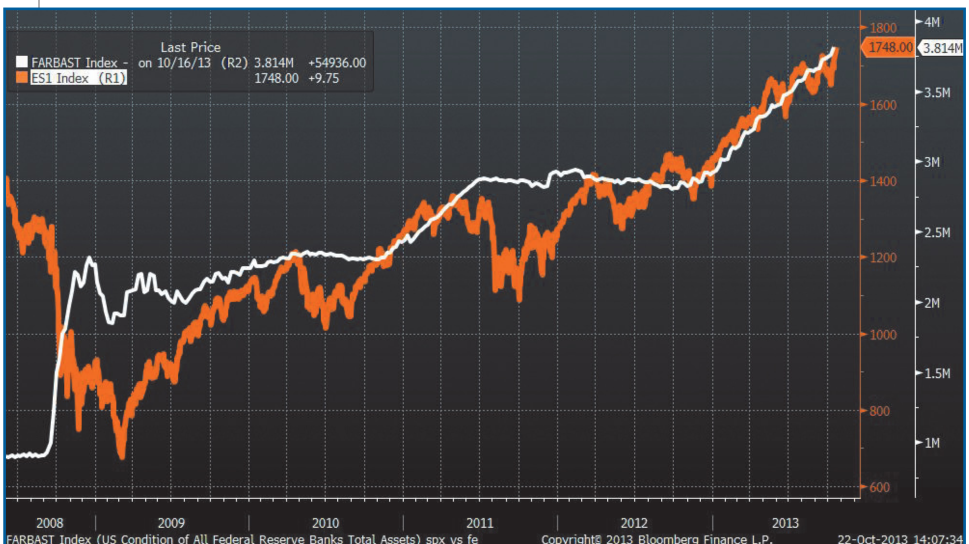


FIGURE 6: DOES QE HAVE AN IMPACT ON THE ECONOMY? It will only be a matter of time before we can answer this question.

the Fed continues to make large scale asset purchases (LSAPs) at a furious pace. Some sort of magic psychological line was crossed in gold, just as we saw with the US dollar, and people just no longer believed. I think this is the key thing to understand about QE. It's mostly a magic trick.

By the way, for reasons no one fully understands, QE had zero impact on sterling. If you look at the chart in Figure 5, it looks like the more QE the UK employed, the more the pound rallied.

This is interesting, but what is the point here? The reason I am going through this discussion is I have noticed a religious fervor returning with regard to the relationship between US equities and QE. The market went all-in long stocks on the back of four more years of QE, guaranteed, following the September "no-taper" pronouncement and the nomination of Janet Yellen as the new Fed chair. Even I couldn't resist sending out the chart in Figure 6.

I have generally been in the camp that most, if not all, of the moves in the S&P 500 Index (SPX) over the past five years can be explained by QE. When QE slows, stocks go down. When QE starts up again, stocks go up. What's so hard to understand about that? I'm trying to have an open mind here. There is a growing body of literature arguing that QE has a limited impact on the real economy. Especially interesting is that some of the more recent research comes from the Fed itself. Imagine Pfizer publishing research questioning the efficacy of one of its own drugs!

Most, if not all, of the moves in the S&P 500 over the past five years can be explained by QE.

So if QE doesn't have much impact on the economy other than in times of crisis, and the wealth effect is questionable (some argue it is negative), and GDP growth is still bouncing around in an anemic 1–3% range, is the mere continuation of QE enough to justify perpetual compounded annual SPX gains of 15% like we have seen since 2009? Or will we reach a point when the market just stops believing, like it did with gold, the US dollar, and the British pound? This question is obviously relevant to the yen trade as well, as it is being driven by Bank of Japan's QE.

A WOBBLY RELATIONSHIP

My view is that we will reach a point one day when more QE does not equal higher equities and then the game will be over. I don't know what will cause the break between SPX and the size of the Fed's balance sheet, but as was the case with gold, the US dollar, and British pound, we may never know, even after the relationship breaks. My point is that you should not be too religious about the SPX vs. Fed balance sheet relationship. It will break one day.

Brent Donnelly trades currencies while employed by Nomura Securities, Inc. He has been trading foreign exchange for more than 15 years. He also traded equities for five years and created a television cartoon that aired nationally in Canada. His approach to the markets is primarily short-term macro and he relies heavily on intermarket and technical analysis.

FURTHER READING

Donnelly, Brent [2007]. "Slingshot Reversals In Forex," *Technical Analysis of* STOCKS & COMMODITIES, Volume 25: June.

‡Bloomberg Finance

‡See Editorial Resource Index

TRADE NEWS & PRODUCTS

SEMINARS ON FOREX TRADING MODEL

Forex Models, a foreign-exchange trading system development company, announced four upcoming seminars designed to educate users on its foreign-exchange trading model. The seminars will also cover topics such as market price behavior and how to convert those concepts into usable trading parameters. Upcoming seminar dates are May 14–16, 2014 in Indianapolis/Louisville; June 18–20 in Chicago; July 16–18 in Kansas City; and September 10–12 in Chicago.

http://ForexModelsLLC.com

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WallStreetWindow.com has launched Power Investor service, a premium trading service run by professional trader and investor Michael Swanson. The service offers not just trading signals and stock picks, but also actual trades made by Swanson. The service is designed to help the investor learn how to find good entry points and manage an account to maximize returns and minimize risk. A free guide to picking stocks written by Swanson titled "The Two Fold Formula" is available from WallStreetWindow.com. The guide demonstrates a technical trading pattern used by Swanson.

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The Zentraders course includes a live trading room, where premium members can execute setups and share market analysis. Mentors provide coaching to members, with the goal of helping students learn to adapt a professional trader's mindset. Free website membership provides some limited content.

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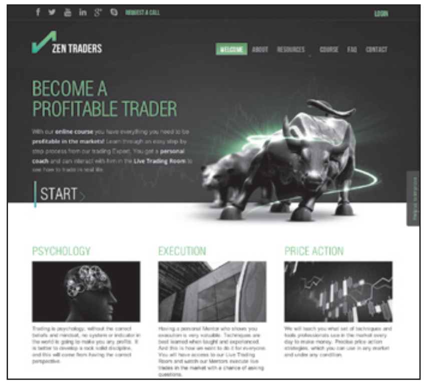

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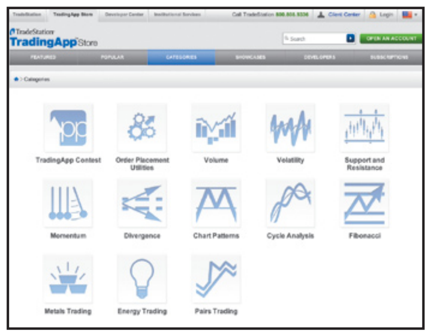

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SEARCH FOR UNDISCOVERED TRADING WIZARDS

Jack Schwager, the author of the bestselling *Market Wizards* series, and **FundSeeder.com** announced the launch of Market Wizards Search, an international search to find yet-undiscovered successful traders. Traders selected from the search may be featured in Schwager's upcoming book, *Undiscovered Market Wizards*.

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by Matt Blackman

VectorVest 7 (US version) is a subscription-based stock analysis and portfolio-management software program that provides the active trader or investor with a wide array of powerful tools to analyze, sort, rank, and graph stocks from a database of more than 8,000 stocks with more than 16 years of data. Three versions are available: end-of-day, intraday (15-minute delayed data), or real-time. (VectorVest also offers software for a number of other international markets. More information on this can be found at http://www.vectorvest.com/products.aspx). For this review, I tested the real-time version on a custom desktop running Windows XP Service Pack 3 with an Intel Dual Core 2.13 GHz processor and 3 GB RAM, as well as on a Toshiba notebook running Windows 8.1 with an Intel i5 1.7 GHz 64-bit processor and 6 GB RAM using a 20 megabyte-per-second fiber optic Internet connection.

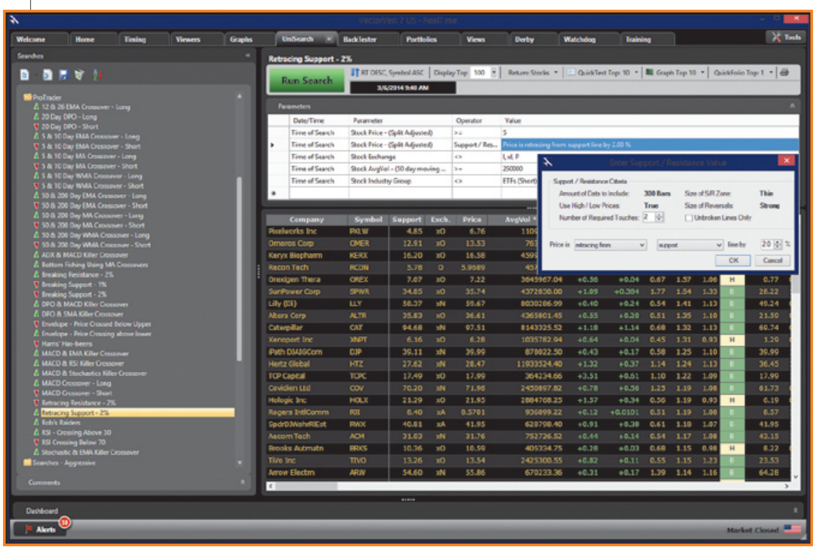

FIGURE 1: PROTRADER 7 SEARCHES. Here you see the UniSearch tab showing technical searches on the left and support (resistance) search criteria in the cells at the top. Also shown is the criteria selection dialog box for support/resistance.

ProTrader 7 Searches

ProTrader 7 Searches is a plugin module that offers technical traders more than 35 prebuilt searches for long and short trades to match your preferred technical trading or investment style (Figure 1). Examples include buy or sell signals based on Bollinger Bands, moving average convergence/divergence (MACD), moving averages (MA), stochastics, average directional index (ADX), and breaking or retracing support or resistance. You can customize criteria and combine two or more indicators to generate more specific conditions. Once you've created a technical strategy, combine it with your preferred fundamental conditions (for example, stocks with increasing revenues and earnings) to find trades that meet your financial goals, and sort it so the best opportunities appear at the top of the list. VectorVest has been uniquely successful here in saving traders from having to view hundreds of charts looking for their preferred setup. The work is done for you.

For example, combining the VectorVest MACD and Stochastic Killer Crossover Search with the fundamental criteria VST-Vector > 1.0 and Stock GRT >= 14, returned Sirona Dental (SIRO) on February 28, 2014 (Figure 2), a stock you may have never heard of otherwise.

FIGURE 2: THE SEARCHES. Here's a look at the chart of Sirona Dental (SIRO) returned on February 28, 2014 with the VectorVest MACD and *Stochastic Killer Crossover Search* with the fundamental criteria VST-Vector > 1.0 and GRT >= 14.

SIRO displayed an MACD crossover [fast EMA (12), slow EMA (26), smoothed EMA (9)], and a stochastic crossover %K (14), %D (3), providing a good entry into a profitable trade.

You also have the ability to customize what information you see when you open stock charts using data going back to 1995. As you can see from Figure 3, which is my preferred chart layout, there is a lot of information displayed, including the stock chart with the 30-period weighted moving average, the VectorVest master VST indicator, automatic support/resistance, volume, and a number of fundamentals charted. This allows you to quickly assess their trend. One big plus is that this is the only stock charting program I have discovered that allows me to chart fundamental and technical information together to quickly see if the fundamentals are improving or deteriorating. You can either use built-in searches to find ideal stock trading candidates, or you can construct and customize your own using a large selection of screening tools and parameters.

RealTime derby

Recently enhanced, the RealTime Derby tool is also a plugin for VectorVest 7. It is an active search tool that gives you a sorted list of the built-in searches generating the highest returns, highest percent winners, maximum drawdown, and overall efficiency each day. The enhancements provide additional analysis modes, including *buy & hold*, *vary by start date*, and *sliding window*. You can see which searches have performed best for periods from one up to 90 days. This is invaluable when looking for the best-performing strategies in any market.

This is especially important considering that of all the time periods examined by Howard Bandy in his book *Modeling Trading System Performance,* the daily holding period far outperformed other trading periods from hourly to yearly. In other words, if you are looking for the most profitable time to hold stocks, probability strongly favors buying at the close of day one and selling at the close of day two, according to his research. Of the many systems Bandy tested, a yearly hold generated the lowest average compound annual return (CAR) of 2.2% with a median maximum drawdown of 31%, versus a CAR of 55.5% for the *daily* holding period with a median maximum drawdown of just 12%.

With the RealTime Derby tool, you have the ability to determine the best-performing set of parameters for finding the best stocks to trade in any kind of market. The design is straightforward and the recordkeeping is built-in, as seen in Figure 4.

The Watchdog

The Watchdog is another optional plugin from VectorVest. It is an advanced alerting system that can monitor the entire market, your watchlists, or favorite stock scans for stocks meeting your buy or sell criteria. You can receive alerts on your cell phone or computer (Figure 5). However, the software does not have to be open and you do not have to be at your computer to receive alerts. Alerts are sent via SMS text or email and documented in the software, as seen in Figure 6.

For example, you can search for stocks generating MACD buy/sell signals, or you can search for stocks breaking resistance or support. For this review, I developed a search to hunt for stocks breaking resistance.

VectorVest is the only program I am aware of that searches for and generates automatic support/resistance lines and allows traders to receive system-generated notifications when stocks are breaking support or resistance. You also have the ability to tailor notifications that appear in the Watchdog screen and set how often you wish to receive notifications from one to multiple notifications per stock per day, associated with a specific Watchdog. Monitoring occurs in real time and alerts are delivered in milliseconds.

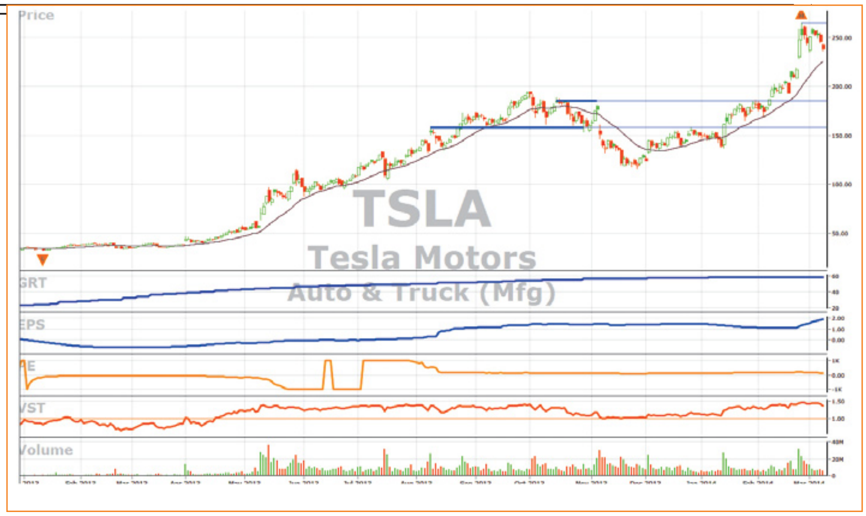

FIGURE 3: CHART LAYOUT. Here you see a stock chart showing a combination of technical tools, including the automatic support/resistance (horizontal blue lines), weighted moving average (brown line), and the VectorVest VST master indicator (red line in the lower subgraph) as well as fundamental indicators growth rate (GRT), forecasted earning per share (EPS), and the forward price/earnings (PE).

VectorVest 7.0 allows you to chart fundamental and technical information together to quickly see if fundamentals are improving or deteriorating.

FIGURE 4: REALTIME DERBY PLUGIN. Here you see a screenshot of the RealTime Derby tool showing the % G/L for the day, the 90-day total % G/L, and how bullish and bearish stock groups were performing at the time. This uses the column display (far right window).

FIGURE 5: WATCHDOG ALERT ON MOBILE DEVICE. The *Watchdog* is an advanced alerting system that can monitor the entire market, your watchlists, or your favorite stock scans for stocks meeting your buy or sell criteria. The alerts can be received on your mobile device or computer.

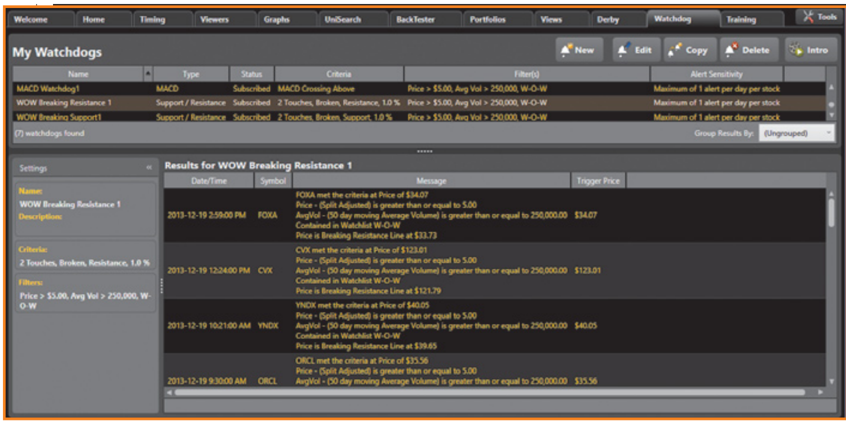

FIGURE 6: WATCHDOG TAB. This screenshot of the Watchdog Tab shows a number of different Watchdogs and real-time notifications in the lower subgraph.

FIGURE 7: BACKTESTER TAB. Here you see the BackTester Tab showing a list of different backtests with summary results, an equity curve for the WOW Winners portfolio, and other key information.

THE AUTOTIMER

This optional plugin automates historical testing and real-time portfolio management, eliminating emotional trading decisions that distract you from your trading plan. In historical mode you create, test, and refine a trading system that includes market timing, stock selection, stop criteria, and money management. You can backtest a strategy over any period in the past and the results are organized and documented for comparison testing.

You simply click the BackTester Tab from any screen in VectorVest 7 to use the AutoTimer in historical mode, displayed in Figure 7. As an example, I built a backtest of stocks from the WOW Winners Watchlist, which scans for stocks that have been recommended by a number of analysts in the media generating a VectorVest buy recommendation, to see how these stocks performed using a simple system to buy when the program issued a confirmed buy signal in up markets and sell when a confirmed sell signal was generated.

The backtest automated the trading of the top five VST/price-rated stocks and sold a stock when it dropped below a ratchet stop or a sell signal was generated by the market timing system selected. You can completely customize the parameters you use to buy and/or sell stocks, choose a market timing system, employ different stop-loss methods, determine how to weight positions, and choose margin requirements and commission rates.

Our WOW Winners portfolio began buying the top five stocks on December 19, 2012 following a confirmed buy signal to ensure the market was moving up, and traded until the confirmed sell signal was issued on December 11, 2013.

Results of the WOW backtest are shown in Figure 8. In summary, the backtest generated a net gain of 27.97% for an annualized return of 28.61% with a maximum drawdown of 14.62%.

Those who have the Watchdog and Derby plugins have the ability to use them together and be notified when stocks from the best-performing strategies in the Derby are generating Watchdog buy or sell signals. WOW Watchlist Winners scored very well over the previous 90 days in the Derby, which prompted me to develop a WOW Watchdog portfolio. Backtesting showed that portfolio performed favorably in the AutoTimer over the previous year.

The AutoTimer integrates into VectorVest's portfolio manager, dubbed *The Genius,* to implement an automated trading plan for paper-trading before a plan is executed in the market through your brokerage. This helps you develop the confidence required to successfully follow the plan and remove the emotion that so frequently

Continued on page 62

Portfolio Summary for: WOW-BackTest1

Current Values as of 2013-12-11

Investment	$100,000.00
Buying Power	$1,958.82
Cash	$1,958.82
Equity	$126,007.28
Margin	$0.00
Total Value	$127,966.10
Net	$27,966.10
Gain / Loss %	27.97 %
Annualized RR	28.61 %
Max Drawdown	14.62 %

Winners / Losers

	Winners	Losers	Total	% Winners
Long Positions (Current)	3	2	5	60.00 %
Short Positions (Current)	0	0	0	0.00 %
All Positions (Current)	3	2	5	60.00 %
Long Positions (Closed)	15	19	34	44.12 %
Short Positions (Closed)	0	0	0	0.00 %
All Positions (Closed)	15	19	34	44.12 %
Overall	18	21	39	46.15 %

Best / Worst Trades

Description	Net Gain / (Loss)
Long 3,078 shares of FTEK	$9,131.71
Long 9,067 shares of CHLN	($5,732.11)

Fees

Commission	($726.35)
Interest Received / (Paid)	$0.00

FIGURE 8: SUMMARY REPORT FROM WOW WINNERS BACKTEST. You can choose a number of different report formats depending on how much information you want to see.


A Trading Method For The Long Haul

For this month's Traders' Tips, the focus is Donald W. Pendergast Jr.'s article in the 2014 Bonus Issue of STOCKS & COMMODITIES, "A Trading Method For The Long Haul." Here we present the May 2014 Traders' Tips code with possible implementations in various software.

The 2014 Bonus Issue of STOCKS & COMMODITIES magazine was mailed to paid subscribers in late February 2014. To get a copy of the Bonus Issue, you can become a subscriber to STOCKS & COMMODITIES magazine by visiting Traders.com or calling 800-TECHNICAL (800 832-4642).

Traders' Tips code is provided to help the reader implement a selected technique from a selected article in this magazine. The entries are contributed by various software developers or programmers for software that is capable of customization.

Readers will find the May 2014 Traders' Tips code and formulas discussed here at our website, **Traders.com,** in the **Traders' Tips** area. In the following pages, you can read some discussion of the technique's implementation by the Traders' Tips contributors as well as some example charts.

To locate **Traders' Tips** at our website, **Traders.com**, click on the link on our main menu at the top of the homepage, or scroll down to the "Current Articles" section and click on the "Traders' Tips" tab.

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✦ TRADESTATION: MAY 2014 TRADERS' TIPS CODE

In "A Trading Method For The Long Haul" which appeared in the 2014 Bonus Issue of STOCKS & COMMODITIES, author Donald W. Pendergast Jr. discusses a method for selecting equities for possible trades. He then provides a set of rules for entering and exiting trades.

The author demonstrates a screening method using TradeStation's RadarScreen, which allows you to monitor up to 2,000 symbols in real time. The indicators he shows are all built in analysis techniques that are included with the TradeStation platform. As an alternative, the trader could use the TradeStation Scanner to search an even broader range of symbols.

We are providing the strategy code for the author's entry and exit rules. In addition to backtesting the strategy in a TradeStation chart, remember that you can use TradeStation's Portfolio Maestro product to quickly backtest on a portfolio of symbols of your choice.

To download the EasyLanguage code, please visit our TradeStation and EasyLanguage support forum. The code for this technique can be found here: http://www.tradestation.com/TASC-2014. The ELD filename is "_TASC_LongHaul.ELD."

(The code is also shown at Traders.com, the STOCKS & COMMODITIES website, in the Traders' Tips area.)

For more information about EasyLanguage in general, please see http://www.tradestation.com/EL-FAQ.

FIGURE 1: TRADESTATION. This chart shows Donald Pendergast's strategy applied to a daily chart of UGI along with the six- and 200-period exponential moving averages and two-period RSI indicators.

A sample chart is shown in Figure 1.

This article is for informational purposes. No type of trading or investment recommendation, advice, or strategy is being made, given, or in any manner provided by TradeStation Securities or its affiliates.

—Doug McCrary
TradeStation Securities, Inc.
www.TradeStation.com

thinkorswim by TD Ameritrade

✦ THINKORSWIM: MAY 2014 TRADERS' TIPS CODE

In "A Trading Method For The Long Haul," which appeared in the 2014 Bonus Issue of STOCKS & COMMODITIES, author Donald W. Pendergast Jr. serves up a model that is "dirt-simple," per his own words. One of the hardest parts of trading is staying disciplined. That is why a simple trading model like the one described in Pendergast's article is perfect for many investors.

At thinkorswim, we make the loading process easy. Simply click on the link http://tos.mx/fIH5JZ and choose *backtest*. You can adjust the parameters within the *edit studies* window to fine-tune your variables.

The chart in Figure 2 shows the entry and exit point when the criteria described in the article was met (based on the RSI, volume average, and beta.) In thinkorswim, backtesting is done with a tool called *strategies*. The link mentioned earlier will save the strategy for you. Then you will have the ability to load the strategy and begin backtesting.

Pendergast's article also discusses scanning for stocks that meet his defined criteria. Don't worry — thinkorswim has you covered there as well. Just click the following link to load his predefined scan: http://tos.mx/WE2FzG. Now you

FIGURE 2: THINKORSWIM. The chart shows the entry and exit point when the criteria described in Donald Pendergast's article in the 2014 Bonus Issue was met (based on RSI, volume average, and beta.)

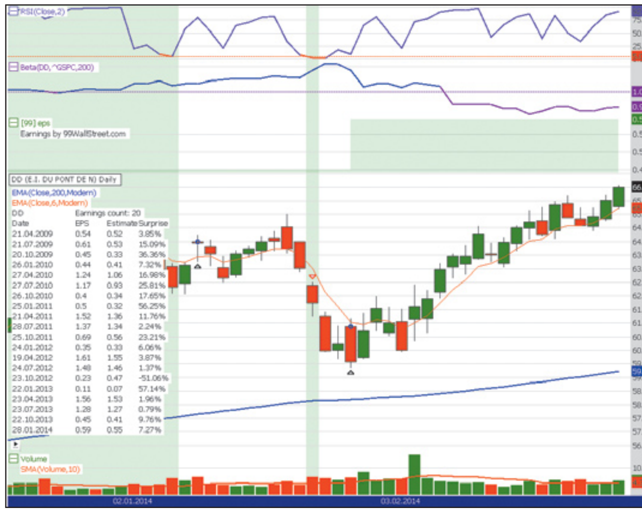

FIGURE 3: WEALTH-LAB. This Wealth-Lab 6 chart shows the application of the fundamental and technical rules from Donald Pendergast's article in the 2014 Bonus Issue on a daily chart of DD (Dupont). The upper pane shows the two-day RSI, below that is the 200-day beta indicator, on top of price there are historical quarterly earnings releases, and volume with average 10-day volume are at the bottom.

can backtest your known stocks as well as find new ones that meet this model's criteria, all with a couple of clicks. Happy swimming!

—thinkorswim
A division of TD Ameritrade, Inc.
www.thinkorswim.com

✦ WEALTH-LAB: MAY 2014 TRADERS' TIPS CODE

It's usually interesting to see if there's added benefit from including non-price information such as fundamental items or sentiment data into a system's rules. In addition to having an intermarket filter (beta), the system featured in Donald W. Pendergast's article that appeared in the 2014 Bonus Issue of STOCKS & COMMODITIES ("A Trading Method For The Long Haul") puts emphasis on beating a stock's most recent quarterly earnings estimates as one of the key elements. To be able to backtest its rules and generate signals for live trading, Wealth-Lab customers should use one of the fundamental data sources that provides access to earnings-surprise data, for example, 99WallStreet.com, for which a fundamental provider already exists.

The strategy we're using to illustrate the trading method adheres to Pendergast's bullet-point list of entry criteria with one exception: It's not required for a stock to have a strong history of positive earnings surprises over the last couple of years, as that would limit the number of signals to a mere handful. To enter, the system would scout for stocks where the five technical, intermarket, and fundamental conditions are in place, and then wait while a stock's two-day RSI crosses above 5 from oversold territory. As we found the proposed exit strategy triggering too many false signals, not allowing the system to operate to its full potential, we replaced it with a simple trailing exit at a 20-day stop of the daily lows (Figure 3).

There are two prerequisites to successfully execute the included strategy in Wealth-Lab:

- Install the Community Indicators library to build the beta indicator
- Install 99WallStreet fundamental data provider *and* download the earnings surprise data for your DataSet.

Latest versions of both libraries are available to registered Wealth-Lab customers for download from the *extensions* section of our website (restart Wealth-Lab after installation or update).

The code listing is also shown at Traders.com in the Traders' Tips area.

—Eugene, Wealth-Lab
MS123, LLC
www.wealth-lab.com

✦ AMIBROKER: MAY 2014 TRADERS' TIPS CODE

In "A Trading Method For The Long Haul," which appeared in the 2014 Bonus Issue of STOCKS & COMMODITIES, author Donald W. Pendergast Jr. presents a long-only strategy based on the RSI, channel breakouts, and moving averages.

Our ready-to-use formula based on Pendergast's article has three purposes: It works as a screening tool (called an *exploration* in AmiBroker) to filter out trade candidates meeting the criteria described in the article. It can also be used as a set of trading rules to backtest the system, and it can also be used as a chart.

Continued on page 60

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FUTURES LIQUIDITY

Trading liquidity is often overlooked as a key technical measurement in the analysis and selection of commodity futures. The following explains how to read the futures liquidity chart published by *Technical Analysis of* STOCKS & COMMODITIES every month.

COMMODITY FUTURES

The futures liquidity chart shown below is intended to rank publicly traded futures contracts in order of liquidity. Relative contract liquidity is indicated by the number of dots on the right-hand side of the chart.

This liquidity ranking is produced by multiplying contract point value times the maximum conceivable price motion (based on the past three years' historical data) times the contract's open interest times a factor (usually 1 to 4) for low or very high volumes. The greatest number of dots indicates the greatest activity; futures with one or no dots show little activity and are therefore less desirable for speculators.

Courtesy of CBOT

All futures listed are weighted equally under "contracts to trade for equal dollar profit." This is done by multiplying contract value times the maximum possible change in price observed in the last three-year period. Thus, all numbers in this column have an equal dollar value.

Columns indicating percent margin and effective percent margin provide a helpful comparison for traders who wish to place their margin money efficiently. The effective percent margin is determined by dividing the margin value ($) by the three-year price range of contract dollar value, and then multiplying by one hundred.

STOCKS

Trading liquidity has a significant effect on the change in price of a security. Theoretically, trading *activity* can serve as a proxy for trading liquidity and equals the total volume for a given period expressed as a percentage of the total number of shares outstanding. This value can be thought of as the turnover rate of a firm's shares outstanding.

Trading Liquidity: Futures

Commodity Futures	Exchange	% Margin	Effective % Margin	Contracts to Trade for Equal Dollar Profit	Relative Contract Liquidity
E-Mini S&P 500	GBLX	4.2	9.9	5	••>>
10-Year T-Note	CBOT	1.2	12.2	16	•••>
5-Year T-Note	CBOT	0.6	11	29	••
Russell 2000 Mini	ICE-US	3.8	7.6	3	•••
T-Bond	CBOT	2.5	16.8	10	•••
E-Mini Nasdaq 100	GBLX	3	6.7	6	•••
Ultra T-Bond	CBOT	3	13.6	6	•••••••••••••••••••••••••••••••••••••
S&P 500 Index	CME	4.2	9.9	1	•••••••••••••••••••••••••••••••••
Silver	COMEX	10.4	7	1	••••••••••••••••••••••••••••
Corn	CBOT	11	15.3	11	••••••••••••••••••••••••
Crude Oil WTI	NYMEX	5	20.1	8	•••••••••••••••••••••••
Gold	COMEX	7	14.9	3	••••••••••••••••••••••
Japanese Yen	CME	2.2	6.2	4	••••••••••••••••••
Euro FX	CME	1.4	11.1	9	•••••••••••••••••
Natural Gas	NYMEX	5.8	10.4	8	•••••••••••••••
Soybeans	CBOT	6.4	24.9	11	••••••••••••
Cotton #2	ICE-US	5.5	4	3	••••••••••••
Sugar #11	ICE-US	8.5	9.5	12	•••••••••••
DJIA mini-sized	CBOT	3.4	9.4	7	•••••••••••
CBOE S&P 500 VIX	CFE	7.8	4.1	6	••••••••••
E-Mini S&P Midcap	GBLX	3.2	6.9	3	••••••••••
High Grade Copper	COMEX	7.2	13.2	5	••••••••
Coffee	ICE-US	7.5	10.2	4	•••••••
2-Year T-Note	CBOT	0.1	16.6	106	••••••
Soybean Meal	CBOT	5.8	14.4	10	•••••
Gasoline RBOB	NYMEX	5	24.4	8	•••••
British Pound	CME	1.3	12.6	19	•••••
Canadian Dollar	CME	1.2	6.5	11	•••••
Wheat	CBOT	9.1	27.8	17	•••••
Live Cattle	CME	2.5	9.5	14	••••
Australian Dollar	CME	1.8	8.6	10	••••
Lean Hogs	CME	2.8	6.1	8	••••
Swiss Franc	CME	1.5	6.3	6	•••
Soybean Oil	CBOT	6.9	14.4	17	•••
Heating Oil	NYMEX	4.9	33.7	11	•••
Cocoa	ICE-US	6.4	17.9	19	••
Nasdaq 100	CME	3	6.7	1	••
Eurodollar	CME	0.1	53.5	309	••
Platinum	NYMEX	5.4	15.8	8	•
Palladium	NYMEX	6.6	20.1	8	•
Mexican Peso	CME	5.8	38.6	34	•
KC HRW Wheat	KCBT	6.3	25.8	20	•
Feeder Cattle	CME	2.3	7.2	7	•
Spring Wheat	MGEX	8.5	18.2	11	•
Canola	WCE	6	11.1	40	•

CBOT	Chicago Board of Trade, Division of CME
CFE	CBOE Futures Exchange
CME	Chicago Mercantile Exchange
COMEX	Commodity Exchange, Inc. CME Group
GBLX	Chicago Mercantile Exchange - Globex
ICE-EU	Intercontinental Exchange-Futures - Europe
ICE-US	Intercontinental Exchange-Futures - US
KCBT	Kansas City Board of Trade
MGEX	Minneapolis Grain Exchange
NYMEX	New York Mercantile Exchange
WCE	Winnipeg Commodity Exchange

1405

Trading Liquidity: Futures is a reference chart for speculators. It compares markets according to their per-contract potential for profit and how easily contracts can be bought or sold (i.e., trading liquidity). Each is a proportional measure and is meaningful only when compared to others in the same column.

The number in the "Contracts to Trade for Equal Dollar Profit" column shows how many contracts of one commodity must be traded to obtain the same potential return as another commodity. Contracts to Trade = (Tick $ value) x (3-year Maximum Price Excursion).

"Relative Contract Liquidity" places commodities in descending order according to how easily all of their contracts can be traded. Commodities at the top of the list are easiest to buy and sell; commodities at the bottom of the list are the most difficult. "Relative Contract Liquidity" is the number of contracts to trade times total open interest times a volume factor, which is the greater of:

$$1 \text{ or } \exp\left(\frac{\ln(volume)}{\ln(5000)}\right) - 2$$

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6. Trade Like The Pros	ARC System, Inc.
7. Real time trading signals E-mini S&P 500	Daytraders Bulletin
8. ASTRO-TREND Monthly Advisory Letter	Norman Winski & Associates
9. OEX Street.com's OEX and Stock Options Advisory	OEX Street.com
10. Master's PPP Stock Option Picks	Masters 'O' Equity Asset Management

These are the 10 advisory services clicked on most often on the Traders' Resource website. Each company is listed in order of clicks received. This is not an editorial rating, ranking, or opinion. For more information on specific products and services, try checking store.Traders.com for archived S&C product reviews.

Continued from page 56

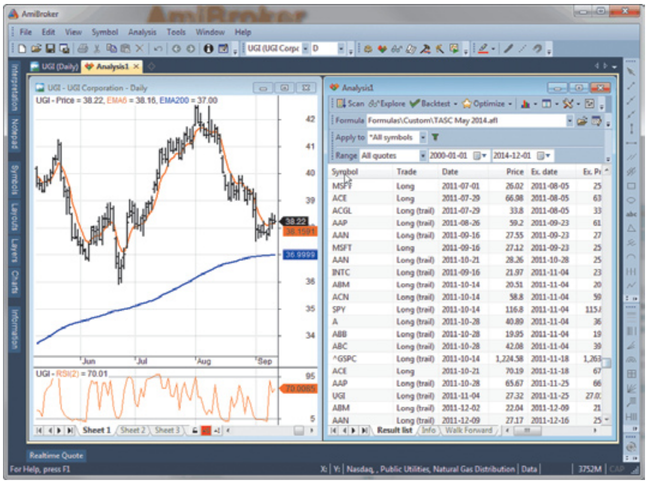

FIGURE 4: AMIBROKER. Here is a daily chart of UGI with six-day and 200-day exponential moving averages, a two-day RSI (left side), and an analysis trade list (right).

To use the formula, copy it to the AFL formula editor, then press "send to analysis" button. From the *analysis* window, you can press the *explore* button to run a screening and/or press *backtest* to evaluate trading system performance.

The code listing is shown at Traders.com in the Traders' Tips area. A sample chart is shown in Figure 4.

—Tomasz Janeczko
AmiBroker.com
www.amibroker.com

✦ NEUROSHELL TRADER: MAY 2014 TRADERS' TIPS CODE

A trigger trading system based on the system described by Donald W. Pendergast Jr. in his 2014 Bonus Issue article in STOCKS & COMMODITIES, "A Trading Method For The Long Haul," can be easily implemented in NeuroShell Trader with a few of the program's 800+ indicators. Simply select "New trading strategy" from the Insert menu and enter the following formulas in the appropriate locations of the trading strategy wizard:

Buy long conditions (all of which must be true):

```
A<B(Min(RSI(Close,2),25),5)
   CrossAbove(Close,Lag(Max(High,25),1))
```

Long trailing stop prices:

```
IfThenElse(A<B(Close,ExpAvg(Close,6)),MaxValEntryAct(Trading
Strategy,Min(Low,3),1),*)
```

Sell long conditions:

```
CrossBelow(Close,ExpAvg(Close,6))
```

If you have NeuroShell Trader Professional, you can also choose whether the parameters should be optimized. After backtesting the trading strategy, use the *detailed analysis* button to view the backtest and trade-by-trade statistics for the strategy.

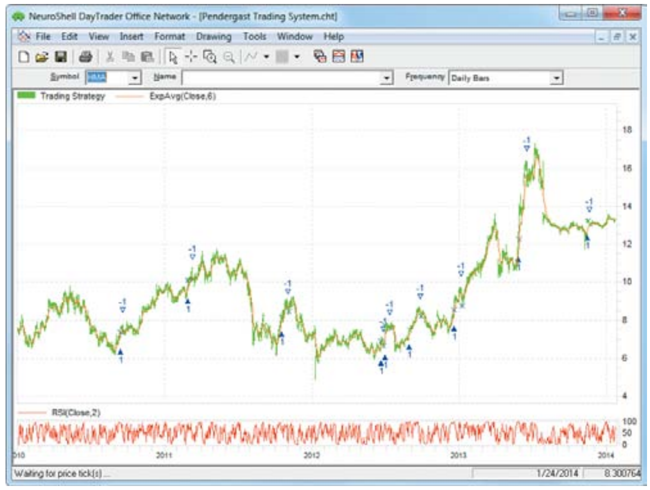

FIGURE 5: NEUROSHELL TRADER. This NeuroShell Trader chart displays the trading system for HMA.

Users of NeuroShell Trader can go to the STOCKS & COMMODITIES section of the NeuroShell Trader free technical support website to download a copy of this or any previous Traders' Tips.

A sample chart is shown in Figure 5.

—Marge Sherald, Ward Systems Group, Inc.
301 662-7950, sales@wardsystems.com
www.neuroshell.com

✦ AIQ: MAY 2014 TRADERS' TIPS CODE

The AIQ code and EDS file based on Donald W. Pendergast's article in the 2014 Bonus Issue of STOCKS & COMMODITIES, "A Trading Method For The Long Haul," can be found at www.TradersEdgeSystems.com/traderstips.htm.

The code I provide there for the long haul system is modified somewhat from the author's descriptions as follows. First, I did not implement the fundamental rule, but this can be done if a data source is located that can export the fundamental fields needed for each stock into a .csv file. This could then be imported into the fundamental module. Second, I modified the exit to add an RSI profit target and changed some of the exit parameters.

To get the code to run properly, the AIQALL list of stocks and groups must be installed and updated on the user's computer. To do this, first get the most recent AIQALL list from the AIQ website, then add all the stocks from the latest data disk that have trading volume greater than about 200,000 shares. We need these in order to have enough stocks to compute the group indexes. Next, we would download data for all the stocks in the database up to the current date. Then, as shown in Figure 6, we would set the RS tickers to the AIQALL list, and also, as shown in Figure 7, recompute all dates for all the groups in the AIQALL list.

The EDS file containing the code has the properties set to the AIQALL list. If you are building an EDS file directly from the code listing copied from the Traders' Tips section at the STOCKS & COMMODITIES website at Traders.com, then be

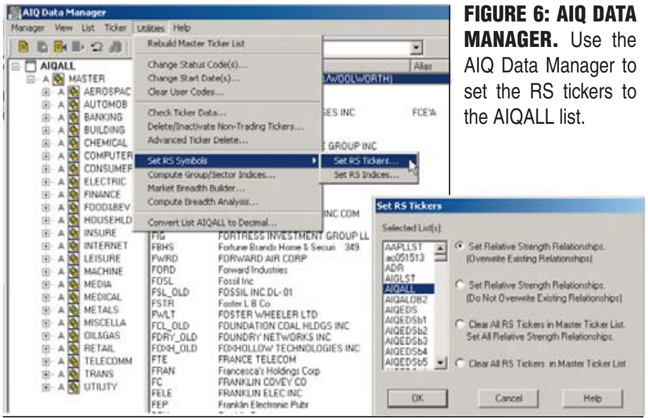

FIGURE 6: AIQ DATA MANAGER. Use the AIQ Data Manager to set the RS tickers to the AIQALL list.

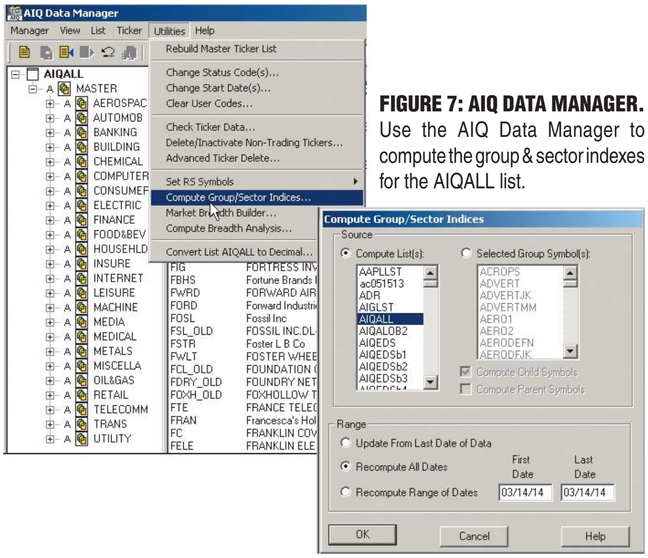

FIGURE 7: AIQ DATA MANAGER. Use the AIQ Data Manager to compute the group & sector indexes for the AIQALL list.

sure to set the properties to the AIQALL list.

—Richard Denning
info@TradersEdgeSystems.com
for AIQ Systems

✦ TRADERSSTUDIO: MAY 2014 TRADERS' TIPS CODE

The TradersStudio code based on Donald W. Pendergast's article in the 2014 Bonus Issue of STOCKS & COMMODITIES, issue, "A Trading Method For The Long Haul," is provided at the following websites:

- www.TradersEdgeSystems.com/traderstips.htm
- www.TradersStudio.com → Traders Resources → Traders Tips

The following code files are provided in the download:

- System LONG_HAUL: A trading system that employs most of the rules outlined in Pendergast's 2014 Bonus Issue article, "A Trading Method For The Long Haul,"
- Function VOLATILITY: Returns the volatility value based on a standard deviation–type formula
- Function SUMM: Returns the summation value of the price array input (helper function for volatility).

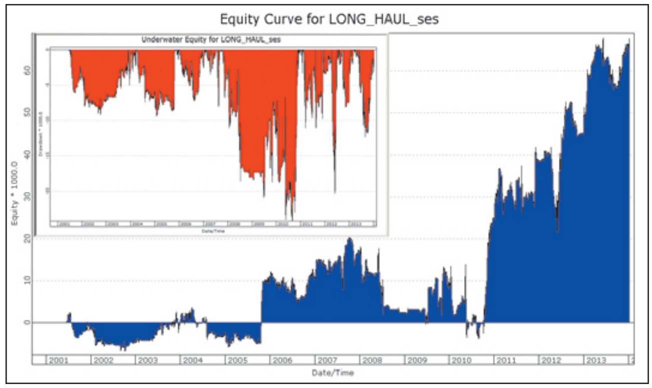

FIGURE 8: TRADERSSTUDIO. Here is an equity curve (blue) and underwater equity curve (red) for Donald Pendergast's long haul system trading a single group, the NASDAQ 100 group of stocks.

To set up the system as Pendergast outlines, we would create a session for each group of stocks that will be traded. *Independent1* should always be set to a major market index like the S&P 500, and *independent2* should be set to the group index for the stocks that are included in the session. Once a session is set up for each group to be traded, a trade plan could be written that would control how many trades are accepted from each group as well as the size of each trade. I did not write the trade plan due to time constraints, but I did test the system on just one group, the NASDAQ 100 group of stocks. I set *independent1* to the S&P 500 index (SPX) and *independent2* to the NASDAQ 100 index (NDX). I did a minor amount of optimization and also added an RSI profit target exit. My code does not implement the fundamental rule.

In Figure 8, I show the equity curve and underwater equity curve for the single session trading a fixed 200 shares of each stock.

—Richard Denning
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for TradersStudio

✦ UPDATA: MAY 2014 TRADERS' TIPS CODE

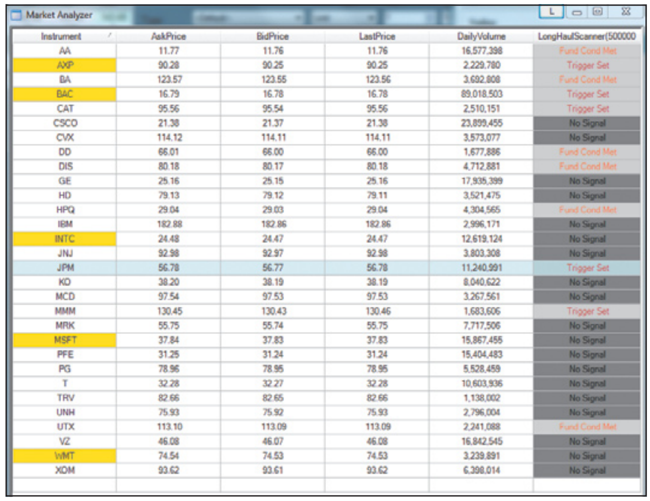
This Traders' Tip is based on "A Trading Method For The Long Haul" by Donald W. Pendergast Jr., which appeared in the 2014 Bonus Issue of STOCKS & COMMODITIES.

In the article, the author develops a long-only system for equity products that have beaten their quarterly earnings expectations consistently. The first stage of the process is to filter your universe of stocks using Updata's scan facility to create a list based on that fundamental criteria.

On this list, you apply two exponentially weighted averages, which are used to determine short-term weakness in an overall uptrend. Above average trading volume, outperformance of the SPX index and a two-period RSI are also included as trade filters. The system exits on a close below some trailing-period low. All parameter values can be optimized within the Updata System Optimiser.

The Updata code for this article is in the Updata library and may be downloaded by clicking the *custom menu* and

FIGURE 9: UPDATA. This chart shows the trading rules as applied to UGI Corp. data of daily resolution.



Market Analyzer

Instrument	AskPrice	BidPrice	LastPrice	DailyVolume	LongHaulScanner(500000
AA	11.77	11.76	11.76	16,577,398	Fund Cond Met
AXP	90.28	90.25	90.25	2,229,780	Trigger Set
BA	123.57	123.55	123.56	3,692,808	Fund Cond Met
BAC	16.79	16.78	16.78	89,018,503	Trigger Set
CAT	95.56	95.54	95.56	2,510,151	Trigger Set
CSCO	21.38	21.37	21.38	23,899,455	No Signal
CVX	114.12	114.11	114.11	3,573,077	No Signal
DD	66.01	66.00	66.00	1,677,886	Fund Cond Met
DIS	80.18	80.17	80.18	4,712,881	Fund Cond Met
GE	25.16	25.15	25.16	17,935,399	No Signal
HD	79.13	79.12	79.11	3,521,475	No Signal
HPQ	29.04	29.03	29.04	4,304,565	Fund Cond Met
IBM	182.88	182.86	182.86	2,996,171	No Signal
INTC	24.48	24.47	24.47	12,619,124	No Signal
JNJ	92.98	92.97	92.98	3,803,308	No Signal
JPM	56.78	56.77	56.78	11,240,991	Trigger Set
KO	38.20	38.19	38.19	8,040,622	No Signal
MCD	97.54	97.53	97.53	3,267,561	No Signal
MMM	130.45	130.43	130.46	1,683,606	Trigger Set
MRK	55.75	55.74	55.75	7,717,506	No Signal
MSFT	37.84	37.83	37.83	15,867,455	No Signal
PFE	31.25	31.24	31.24	15,404,483	No Signal
PG	78.96	78.95	78.95	5,528,459	No Signal
T	32.28	32.27	32.28	10,603,936	No Signal
TRV	82.66	82.65	82.66	1,138,002	No Signal
UNH	75.93	75.92	75.93	2,796,004	No Signal
UTX	113.10	113.09	113.09	2,241,088	Fund Cond Met
VZ	46.08	46.07	46.08	16,842,545	No Signal
WMT	74.54	74.53	74.53	3,239,891	No Signal
XOM	93.62	93.61	93.62	6,398,014	No Signal

FIGURE 10: NINJATRADER MARKETANALYZER. This screenshot shows the scanner indicator applied to the DOW30 in NinjaTrader's MarketAnalyzer.

system library. Those who cannot access the library due to a firewall may paste the code shown at the Traders' Tips area of the STOCKS & COMMODITIES website, Traders.com, into the Updata custom editor and save it.

A sample chart is shown in Figure 9.

—Updata support team
support@updata.co.uk, www.updata.co.uk

NINJATRADER®

✦ NINJATRADER: MAY 2014 TRADERS' TIPS CODE

The LongHaulScanner, as discussed in "A Trading Method For The Long Haul" by Donald W. Pendergast Jr. in the 2014 Bonus Issue of STOCKS & COMMODITIES, has been implemented as indicator available for download at www.ninjatrader.com/SC/May2014SC.zip.

Once it has been downloaded, from within the NinjaTrader Control Center window, select the menu File → Utilities → Import NinjaScript and select the downloaded file. This file is for NinjaTrader version 7 or greater.

You can review the indicator source code by selecting the menu Tools → Edit NinjaScript → Strategy from within the NinjaTrader Control Center window and selecting the LongHaulScanner file.

A sample chart implementing the strategy is shown in Figure 10.

—Raymond Deux & Chelsea Bell
NinjaTrader, LLC
www.ninjatrader.com

PRODUCT REVIEW

VECTORVEST REVIEW / BLACKMAN

Continued from page 54

derails even the best-laid trading plans.

PUTTING IT ALL TOGETHER

VectorVest offers a comprehensive suite of plugins that will appeal to longer-term fundamentally based investors with the end-of-day version, and to shorter-term technical traders with either the delayed intraday or real-time version. The software is sophisticated enough to suit institutional and retail full- or part-time users. The program offers a number of new features and optional plugins to make it easy to find and backtest trades in any time frame. All but the Derby plugin are included with a VectorVest 7 RealTime subscription at no additional cost.

Matt Blackman is a full-time technical and financial writer and trader. He produces corporate and financial newsletters, and assists clients in getting published in the mainstream media. He is the host of TradeSystemGuru.com. Blackman has earned the Chartered Market Technician (CMT) designation. Find out what stocks and futures he is watching on Twitter at www.twitter.com/RatioTrade.

FURTHER READING

Bandy, Howard B. [2011]. *Modeling Trading System Performance*, Owl Press, www. howardbandy.com, http://www.modelingtradingsystemperformance.com/index.html.

Star, Barbara [2012]. "VectorVest 7," Quick-Scan, *Technical Analysis of* STOCKS & COMMODITIES, Volume 30: May.

_____ [2009]. "VectorVest RealTime," product review, *Technical Analysis of* STOCKS & COMMODITIES, Volume 27: July.

• VectorVest ProTrader 7 product and pricing information: http://www.vectorvest.com/products/vv7-us.aspx

‡VectorVest

‡*See Editorial Resource Index*