

TECHNICAL ANALYSIS OF STOCKS & COMMODITIES™

VOLUME CONFIRMATION FOR A TREND SYSTEM

Trend thrust and volume price indicators 8

THEORY VERSUS REALITY

Not all is what we expect 16

WHICH PRICE CHANNEL METHOD IS MOST EFFECTIVE FOR TRADING?

Indicators on the test bench 22

WRITING COVERED CALLS

Part 2: Opportunities for option sellers 30

ADVANCING A CLASSIC TRADING TOOL FOR CRYPTO TRADING

Smoothed heikin-ashi 34

AUGMENTING FINANCIAL ANALYSIS WITH AI

A synergistic approach 42

SCHANNEP AND SAHM

Recession indicators 44



AUGUST 2024

\$6.99



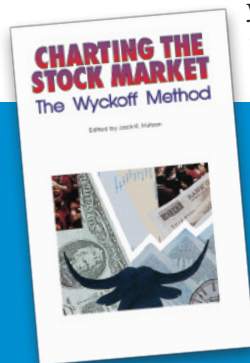
TAKE CONTROL OF YOUR TRADING WITH THE PROFESSIONAL TRADERS' STARTER KIT™



THE FOREMOST COLLECTION FOR TRADERS
This massive collection packages the best tools for trading and investing in *any* market!

1. **Technical Analysis of Stocks & Commodities**, the Traders' Magazine™. The premier magazine for technical analysis. You'll get **five years** — 65 issues — including our annual Bonus Issues with our Readers' Choice Awards.
2. **S&C Digital Edition**. Recent complete issues available in their entirety as PDFs for you to either download or read directly in your browser. No more waiting for the mail to deliver your magazine! You will still receive the printed magazine unless you opt for a digital-only subscription.
3. **Complete Digital Archive**. The complete archives as PDFs — more than 17,000 pages — from *Technical Analysis of Stocks & Commodities* from 1982 through the present. The articles can be read in your browser or download to your computer (or any device with Internet access and the ability to read a PDF!)

4. **Traders.com Advantage**, premium website content delivering real-world technical analysis to you! You'll get **five years** of charts, indicators, and "how-to" advice for specific markets, currencies, stocks, and commodities; near-term opportunities; price movement; new techniques. Posted in real-time with an archive of thousands of articles.
5. **Working Money**, the Investors' Magazine online. You'll get **five years** of market observations; explanations of charts, markets, and market sectors; money management; and interviews with money people that will help you trade and invest wisely.
6. **Article Code**. Download or copy & paste code presented in past issues of *Stocks & Commodities* — no need to type it out manually.
7. **Optimized Trading**. The optimized indicator values can be used as starting points when trying to decide what values to input into your charting software. Search for a certain symbol or company or build your own portfolio.



ALSO RECEIVE A FREE⁺ BOOK WITH YOUR PTSK ORDER!
Charting The Stock Market: The Wyckoff Method, edited by Jack K. Hutson, is yours free⁺ with your order for the Professional Traders' Starter Kit.

⁺Shipping and handling charges apply for foreign orders.



TECHNICAL ANALYSIS OF **STOCKS & COMMODITIES**

www.Traders.com

^{*}Based on the 5-year subscription rate of \$299.99. Shipping extra for foreign addresses.





Trade US Stocks and Options Around the Clock

React immediately to market-moving news and trade over 10,000 US stocks and ETFs, plus US equity index options, when it's convenient for you.

The best-informed
investors choose Interactive Brokers



ibkr.com/around-clock



Member - NYSE, FINRA, SIPC – Supporting documentation for any claims and statistical information will be provided upon request. Any discussion or mention of a stock or ETF is not to be construed as recommendation, promotion or solicitation. All investors should review and consider associated investment risks, charges and expenses of the investment company or fund prior to investing. Before acting on this material, you should consider whether it is suitable for your particular circumstances and as necessary, seek professional advice. Options involve risk. For more info see ibkr.com/occ

06-IB24-1677CH1680

EDITORIAL

editor@traders.com

Editor in Chief Jack K. Hutson

Production Manager Karen E. Wasserman

Graphic Designer Wayne Shaw

Webmaster Han J. Kim

Contributing Editors John Ehlers,
Anthony W. Warren, PhD.

Contributing Writers Thomas Bulkowski, Martin
Pring, Barbara Star, Markos Katsanos, Leslie N.
Masonson

OFFICE OF THE PUBLISHER

Publisher Jack K. Hutson

Industrial Engineer Jason K. Hutson

Project Engineer Sean M. Moore

ADVERTISING SALES

4757 California Ave. S.W.

Seattle, WA 98116-4499

206 660-8577 Fax 206 938-1307

advert@traders.com

National Sales Manager Edward W. Schramm
ESchramm@traders.com

CIRCULATION

Subscription & Order Service 1 800 832-4642

1 206 938-0570 Fax 1 206 938-1307

circ@traders.com

Subscription Manager Sean M. Moore

WEBSITE

http://www.traders.com

Staff members may be emailed using first initial
plus last name plus @traders.com

Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by Technical Analysis, Inc. for users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of \$1.00 per copy, plus 50¢ per page is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923. Online: <http://www.copyright.com>. For those organizations that have been granted a photocopy license by CCC, a separate system of payment has been arranged. The fee code for users of the Transactional Reporting Service is: 0738-3355/2023 \$1.00 + 0.50.

Subscriptions: USA: one year (13 issues) \$89.99; Magazines shipped outside the US require additional postage as follows: Canada, US\$15 per year; Europe, US\$25.50 per year; all other countries US\$39 per year. Single copies of most past issues from the current year are available prepaid at \$8 per copy. Prior years are available in book format (without ads) or digitally from www.traders.com. USA funds only. Washington state residents add sales tax for their locale. VISA, MasterCard, AmEx, and Discover accepted. Subscription orders: 1 800 832-4642 or 1 206 938-0570.

Technical Analysis of Stocks & Commodities™, The Traders' Magazine™, is prepared from information believed to be reliable but not guaranteed by us without further verification, and does not purport to be complete. Opinions expressed are subject to revision without notification. We are not offering to buy or sell securities or commodities discussed. Technical Analysis Inc., one or more of its officers, and authors may have a position in the securities discussed herein.

The names of products and services presented in this magazine are used only in an editorial fashion, and to the benefit of the trademark owner, with no intention of infringing on trademark rights.

6 Market Rap

by *Emilio Tomasini*

"Unserious" thoughts on serious topics in finance. This month: Trendlines: do they work?

FEATURE ARTICLE

8 Volume Confirmation For A Trend System

TIPS

by *Buff Pelz Dormeier, CMT*

Volume flows help to validate trending and even nontrending price movements. This study presents an updated trend-following trading system based on combining the ADX with the trend thrust indicator and volume price confirmation indicator.

15 Futures For You

by *Carley Garner*

Here's how the futures market really works. This month: Copper correlation.

16 Theory Versus Reality

by *Perry J. Kaufman*

Are your expectations in line with reality? Here's a look at some traditional market beliefs and whether such scenarios tend to play out as expected.

22 Indicators On The Test Bench: Which Price Channel Method Is Most Effective For Trading?

by *Andrea Unger*

Let's put some popular and useful tools to the test head-to-head to see what may work best for different futures markets.

28 Explore Your Options

by *Jay Kaeppl*

Got a question about options? This month: Iron condors for income.

30 Writing Covered Calls Part 2: Opportunities For Option Sellers

by *John Devcic*

Last time in part 1, we looked at using the option strategy of writing covered calls, including what to consider when you go to write (sell) a covered call. This time, we look at some ways to implement and structure your covered call writes, and consider uses for this popular instrument that you may not have thought of.

34 Smoothed Heikin-Ashi: Advancing A Classic Trading Tool For Crypto Trading

by *Azeez Mustapha*

"Heikin-ashi" translates to "average bar" in Japanese. The smoothed heikin-ashi is an approach to charting that can lead to better outcomes for your cryptocurrency trading. Find out how.

37 Algo Q&A

by *Kevin J. Davey*

Got a question about system or algo trading? This month: Realistic expectations.

38 The Savvy Technician

by *Stella Osoba, CMT, Esq.*

Recognizing and applying technical chart patterns to trading. This month: Deconstructing the Hindenburg omen.

40 Strategy Corner

by *Dave Mabe*

Got a question about using trading strategies? This month: The hidden cost of taking partial profits.

42 Augmenting Financial Analysis With Artificial Intelligence

by *Diana Wolf Torres*

Need a little demystification on how AI is being applied to the financial field? Here's a quick look at some features of AI and its transformative potential for collaboration between humans and machines in market analysis.

44 The Schanep And Sahn Recession Indicators

by *Greg Aharonian*

Getting ahead of the next recession can set you up for profitable trading opportunities. But how do you detect when a recession arrives? One indicator in the news recently is the Schanep recession indicator, and it's easy to calculate. A related indicator is the Sahn rule. Here's how to put them to use.

DEPARTMENTS

46 Traders' Tips

52 Advertisers' Index

52 Editorial Resource Index

53 Futures Liquidity

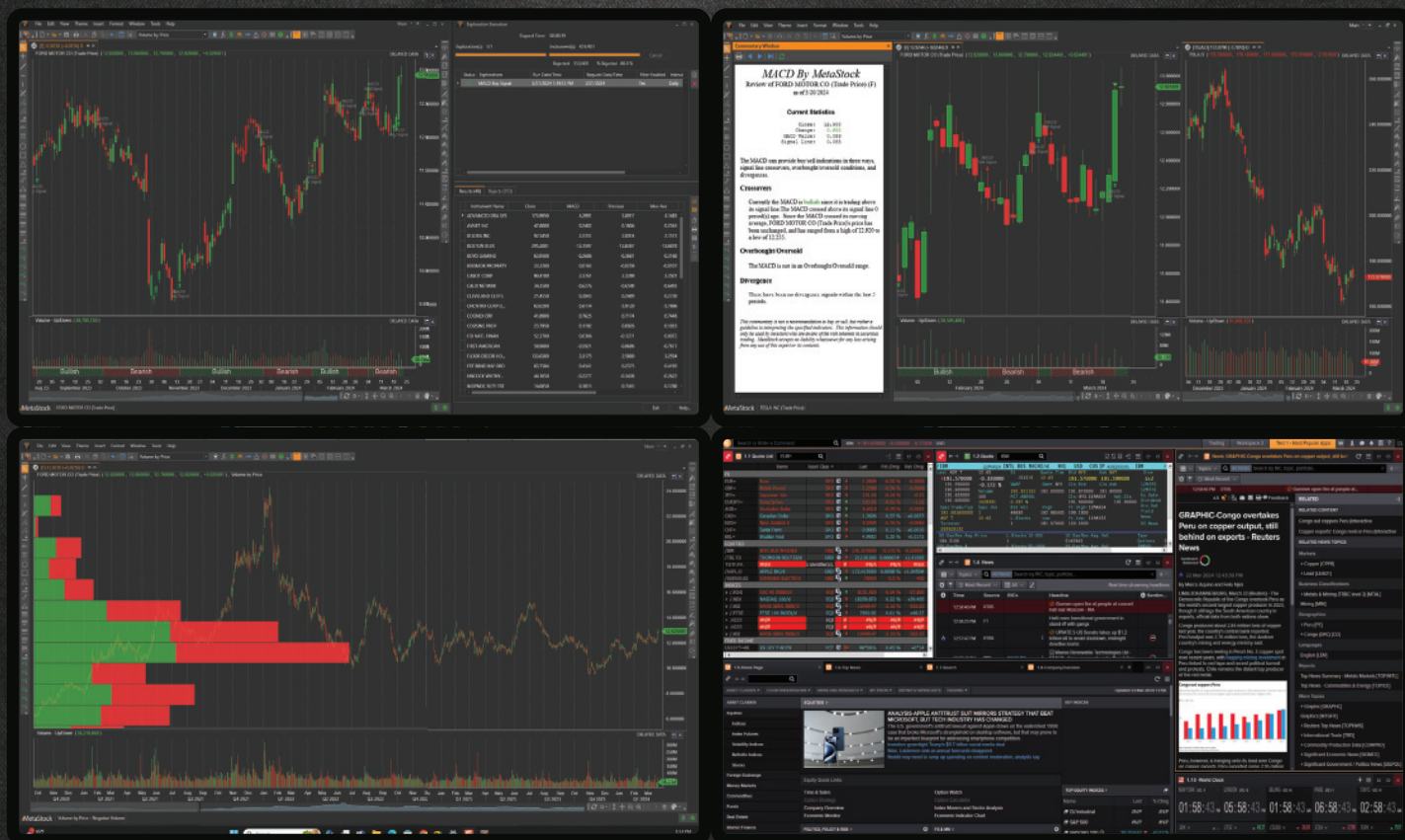
54 Classified Advertising

54 Traders' Resource

TIPS

This article is the basis for Traders' Tips this month.

■ Cover: Taras Valerievich/Shutterstock



“Whoa. This is amazing.”

-pretty much anyone who has tried MetaStock 19

Watch a demo and get an extended trial of the **All-New MetaStock 19** featuring **Improved Workflows** and **Next-Gen Flexible Layouts**
[MetaStock.com/P424](https://www.metastock.com/P424)

This is neither a solicitation to buy or sell any type of financial instruments, nor intended as investment recommendations. All investment trading involves multiple substantial risks of monetary loss. Don't trade with money you can't afford to lose. Trading is not suitable for everyone. Past performance, whether indicated by actual or hypothetical results or testimonials are no guarantee of future performance or success. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS OR TESTIMONIALS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. Furthermore, all internal and external computer and software systems are not fail-safe. Have contingency plans in place for such occasions. MetaStock assumes no responsibility for errors, inaccuracies, or omissions in these materials, nor shall it be liable for any special, indirect, incidental, or consequential damages, including without limitation losses, lost revenue, or lost profits, that may result from reliance upon the information presented.

THE WORLD OF RETAIL TRADING

Emilio Tomasini is an adjunct professor of corporate finance at the University of Bologna in Italy and is a professional trader. He has audited over 5,000 accounts of traders during 13 years of a real-money trading competition, giving him unique insights into what helps a retail trader to succeed. He has expertise in technical analysis and trading system design. In this column, he shares his sometimes “unserious” thoughts on serious topics in finance. In his writings, he hopes to help the retail trader better understand the leap from unprofitable to profitable trader, firmly believing that the right answers can come only if the right questions are asked. At his website at www.emiliotomasini.com, he offers some of his expertise in a free video course.



Emilio Tomasini

TRENDLINES: DO THEY WORK?

In the Western world, technical analysis developed as a body of practical rules from the mid-1800s onward. These rules of thumb emerged from the direct experience of traders, an experience passed down through generations in a primitive environment where charts were drawn by hand on graph paper, with prices copied from the *Wall Street Journal* or, worse, from the quote machines of the time. There were no computers to transmit data online, nor software to test the statistical effectiveness of these rules, as data only existed if operators manually recorded it on paper. These rules form the core of technical analysis: Patterns such as the head & shoulders, triangles, and key reversals have become standard tools for any respectable trader.

Only about twenty years ago, with the advent of affordable computing, did we begin to test these rules of thumb to see if they generated profits.

It turned out that many of them were simply ineffective, leading to the disrepute in which technical analysis found itself at the time, particularly in academic circles. This discredit is only partially justified because these were indeed rules of thumb and should be treated as such. Why these ineffective rules still infest books published by even prestigious publishers is unknown, though there

In my experience as a quantitative trader, trendlines work in highly correlated markets.

is suspicion that behind these pied pipers of technical analysis is the self-serving interest of the financial industry, which is all too happy to spread the belief that technical analysis can control the market. The result is the investor loses money but

the industry profits through commissions. We know very well that the market cannot be controlled with technical analysis.

But let's get to the crux of the matter: Among the rules of thumb of “classic” technical analysis, based on this body of rules handed down from father to son and in contrast to the “modern” one based on statistical testing of historical series, we find trendlines. A trendline is constructed by connecting two significant lows (uptrend) or two significant highs (downtrend). When an uptrend line is broken, a downward movement ensues, and when a downtrend line is broken, an upward movement follows.

I'm well aware that for this audience, there's no need to explain what a trendline is, but I want to use two charts for interest. Figures 1 and 2 illustrate examples of an upward trendline and a downward trendline, respectively.



FIGURE 1: UPWARD TRENDLINE



FIGURE 2: DOWNWARD TRENDLINE

If you have even a basic understanding of technical analysis, I know that looking at the two charts, you may have wondered why I drew those two trendlines in that way and not in another manner you might think more appropriate. Or perhaps you are frantically flipping through one of John Murphy's or Martin Pring's books to see what those sacred texts of technical analysis say about how to properly draw a trendline.

Even the ubiquitous free content on the internet can detail how to draw trendlines. A classic rule of thumb in technical analysis says you should draw trendlines from right to left, connecting the most recent highs and lows, rather than those that best fit the situation. They advise waiting for a pullback or a breakthrough of at least 3% of the trendline to consider it broken, among other such delights that I won't dwell on. Another view holds that trendlines should be decisively broken with a significant gap between the previous and subsequent closes, among many other validation characteristics, as explained in *The New Science Of Technical Analysis* (1994). I believe that technical analysis should be scientific, not driven by momentary emotions.

Now, let's return to the heart of the matter: Everyone wonders how to draw trendlines, but no one asks whether trendlines work, and if they do, *why* they work. In my experience as a quantitative trader, trendlines work in highly correlated markets. I've had positive surprises applying even prepackaged TradeStation code to US and European bonds. In highly volatile markets, the results are more uncertain, although the bias is clearly positive.

This brings us to the crucial question: Why do trendlines work? My answer is a non-answer, as I

Continued on page 21

ABLETREND Trusted Reliable Signals

for Volatile Markets Since 1994

Extensive Chart Library Available Online
Free Access for Featured Trade Signal Examples

✓
 ✓

Updated Daily
Intraday & Swing Trading

*Access the New Resource from the Link Below

Traders Rave Over AbleTrend

1997-2024 Award Winning Trading Systems for Stocks, Futures and Options

ABLESYS SINCE 1994 **ABLETREND 7.0** COLLECTED BY **Trustpilot**

- "32 years in the market. This is the best I've seen yet." - Anthony
- "Those times that I lose money are usually because I haven't followed the signals being generated by Ablesys. It's a **very dependable system**." - Peter
- "**Best ever** helper for my stock **Entry and Exit executions**." - Neil
- "This system is **absolutely amazing**. I have been trading for over **twenty years** and **nothing can come to the accuracy of this awesome system**." - Customer
- "**Great tool without bias. Extremely easy to use**." - Steve
- "I am extremely happy with AbleTrend software. It has **changed my trading in the best possible way**." - Francesco

- "I have used it for **10+ years** and have tried many other trading software systems. This is by far the **very best system** that can adjust to any market condition... I am exceptional pleased with its results." - Joe S
- "**I have been using AbleTrend for 13 years!** Primarily for day trading stocks... I could not do without it!" - Ricardo DaSilva
- "**Have been using Able Trend for 20 years and it is just as effective and accurate as it was in 1999.** I have used it profitably for day trading for futures, just as I have for position trading stocks... Use every day whether trading that day or not." - Dan Sayyer
- "**I never make a trade without checking with Ablesys.** The program is my important guiding light and has been for **over 10 years**." - Harvey Saff

TEST DRIVE THE LATEST SIGNALS
www.ablesys.com/SCM

Risk FREE AbleTrend 30-Day Trial
50% Discount code: SCA50

©2024 Ablesys Corp. • 35111F Newark Blvd. Suite 506, Newark, CA 94560 • 510-495-0976 • sales@ablesys.com

THESE RESULTS ARE BASED ON SIMULATED OR HYPOTHETICAL PERFORMANCE RESULTS THAT HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE THE RESULTS SHOWN IN AN ACTUAL PERFORMANCE RECORD, THESE RESULTS DO NOT REPRESENT ACTUAL TRADING. ALSO, BECAUSE THESE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THESE RESULTS MAY HAVE UNDER-OR OVER-COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED OR HYPOTHETICAL TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE BEING SHOWN. THE TESTIMONIAL MAY NOT BE REPRESENTATIVE OF THE EXPERIENCE OF OTHER CLIENTS AND THE TESTIMONIAL IS NO GUARANTEE OF FUTURE PERFORMANCE OR SUCCESS. TECHNICAL ANALYSIS OF STOCKS & COMMODITIES LOGO AND AWARD ARE TRADEMARKS OF TECHNICAL ANALYSIS, INC.



The Trend Thrust Indicator And Volume Price Confirmation Indicator

Volume Confirmation For A Trend System

Volume flows help to validate trending and even nontrending price movements. This study presents an updated trend-following trading system based on combining the ADX with the trend thrust indicator and volume price confirmation indicator.

In the July 2007 issue of this magazine, I introduced the *volume price confirmation indicator* (VPCI), designed to be utilized to validate trends. Later, in the August 2011 issue, I introduced the *trend thrust indicator* (TTI), which I based on the moving average convergence/divergence (MACD) indicator (which was developed by George Appel in the 1970s) and I enhanced it with adaptive volume functions.

(Details on how the VPCI is constructed can be found in my July 2007 S&C article in this magazine's archives at Traders.com, and details on the construction of the TTI can be found in my August 2011 article in this magazine's article archives at Traders.com.)

I also discuss these indicators, and the importance of volume for market analysis, in my new book, *The Volume Factor*.

Since I was very happy with the performance of the volume price confirmation indicator, which I used in a trend system (my trend-following system combined ADX with MACD and used my VPCI indicator for volume confirmation), and given that I was also very happy with the performance of the trend thrust indicator, I thought, why not replace MACD with TTI in my trend-following system?

Here, I will delve into this question, presenting the outcomes of my study.

BACKGROUND: A TREND-FOLLOWING STRATEGY BASED ON MACD, ADX

But first, I'll summarize the findings from the two earlier STOCKS & COMMODITIES articles.

My earlier studies juxtaposed trading the SPY (SPDR S&P 500 index ETF) using an ADX+MACD combination strategy, versus an ADX+MACD+OBV strategy (where the OBV provides volume confirmation in the system), versus an ADX+MACD+VPCI strategy (where the VPCI provides volume confirmation in the system).

The ADX in the system is a seven-period ADX.

For background, the ADX (average directional index) was developed by J. Welles Wilder as a trend strength indicator in the 1970s and the OBV (on-balance volume) was developed by Joseph Granville as a volume-based momentum indicator in the 1960s.

The results from my 13-year study ending in 2006 are reproduced in Figures 1 and 2. Excluding dividends and interest, the ADX+MACD system incorporating OBV yielded an annualized rate of return of -1.57%, while the annualized return for the ADX+MACD system using VPCI stood at 8.11%, surpassing the OBV version of the system by over 9.5% annualized. The VPCI version of the system exhibited enhanced reliability, with profitable signals produced more than 65% of the time, compared to the ADX+MACD+OBV system's 42.86% profitable.

Another crucial aspect of portfolio management is risk evaluation. The VPCI reconciles volume and price by considering their proportional weights, thus confirming trend momentum. Figure 1 shows a comparison of the ADX+MACD system plus the VPCI versus the OBV. Applying the various combinations of indicators reveals that the system *with* the

by Buff Pelz Dormeier, CMT

VPCI yielded more favorable outcomes compared to the other strategies, neglecting VPCI's volume confirmation asymmetry. Measured by volatility, the system with VPCI exhibited a 7.42 standard deviation while the system with OBV had a 17.4 standard deviation, resulting in significantly better risk-adjusted rates of return for the VPCI-enhanced strategy. VPCI's Sharpe ratio from inception was 0.70 with a profit factor of 2.47, while the system using OBV showed a -0.09 Sharpe ratio and a profit factor of less than 1.

If an investor had solely relied on MACD buy and sell signals within this system (without the OBV or VPCI), the outcome is even worse. The ADX+MACD trading system without VPCI missed out on nearly a 12% annualized return—the difference stemming from VPCI's positive 8.11% versus MACD's negative 3.88%—while increasing risk substantially. Even employing a buy-and-hold approach would have yielded only a slightly higher return, albeit with significantly greater risk than the ADX+MACD+VPCI trend system.

The strategy with VPCI nearly matched 90% of the buy-and-hold strategy's return with about 60% less risk, as measured by standard deviation. Looking at risk-adjusted returns differently, the five-year Sharpe ratio for the S&P 500 SPY ETF was 0.1 compared to the VPCI system's 0.74. Moreover, the VPCI investor was invested only 35% of the time, allowing for the possibility of investment of the cash when not employed by the system. During the 65% of non-investment periods, a mere 1.84% money market yield would surpass the buy-and-hold strategy (yields were more than double that rate during most of the study).

In addition, the ADX+MACD+VPCI

Strategy*	Annual return	Time invested	Std dev	5-yr Sharpe ratio	% Profitable	Profit factor
Buy & hold	9.94%	100.00%	17.75%	0.10	N/A	N/A
ADX+MACD	-3.88%	24.79%	13.03%	0.27	41.79%	0.97
w/VPCI	8.11%	35.63%	7.42%	0.74	65.15%	2.47
w/OBV	-1.57%	27.02%	17.40%	0.05	42.86%	1.00

FIGURE 1: COMPARISON OF ADX+MACD TRADING SYSTEM WITH VPCI VS. OBV, 1993–2006. This compares metrics for a trading strategy based on the MACD and a seven-period ADX, with VPCI versus OBV for volume confirmation. The ADX+MACD+VPCI system yielded more favorable outcomes in the 1993–2006 test period than the ADX+MACD+OBV system. *Dividends not included.

Strategy*	1993	1994	1995	1996	1997	1998	1999
Buy & hold	3.61	-2.21	34.95	20.1	31.44	27.04	19.11
ADX+MACD	0.31	5.42	0.88	12.63	14.72	-12.93	-30.6
w/VPCI	2.93	6.42	6.12	19.83	19.09	8.9	3.17
w/OBV	-1.03	-1.24	0	18.81	7.3	12.4	-12.43

Strategy*	2000	2001	2002	2003	2004	2005	2006
Buy & hold	-10.68	-12.87	-22.81	26.12	8.62	3.01	13.74
ADX+MACD	9.27	11.12	0.9	1.34	1.8	1.69	-11.32
w/VPCI	-2.71	21.28	-0.65	10.4	4.27	4.8	9.29
w/OBV	-26.55	-28.34	12.45	-12.79	33.32	-15.58	-8.33

FIGURE 2: ANNUAL RETURNS FOR EACH STRATEGY. This compares the annual returns of the various strategies (ADX+MACD, ADX+MACD+VPCI, ADX+MACD+OBV) versus buy-and-hold for the 1993–2006 period. The worst annualized return for the system with VPCI was only -2.71%. *Dividends not included.

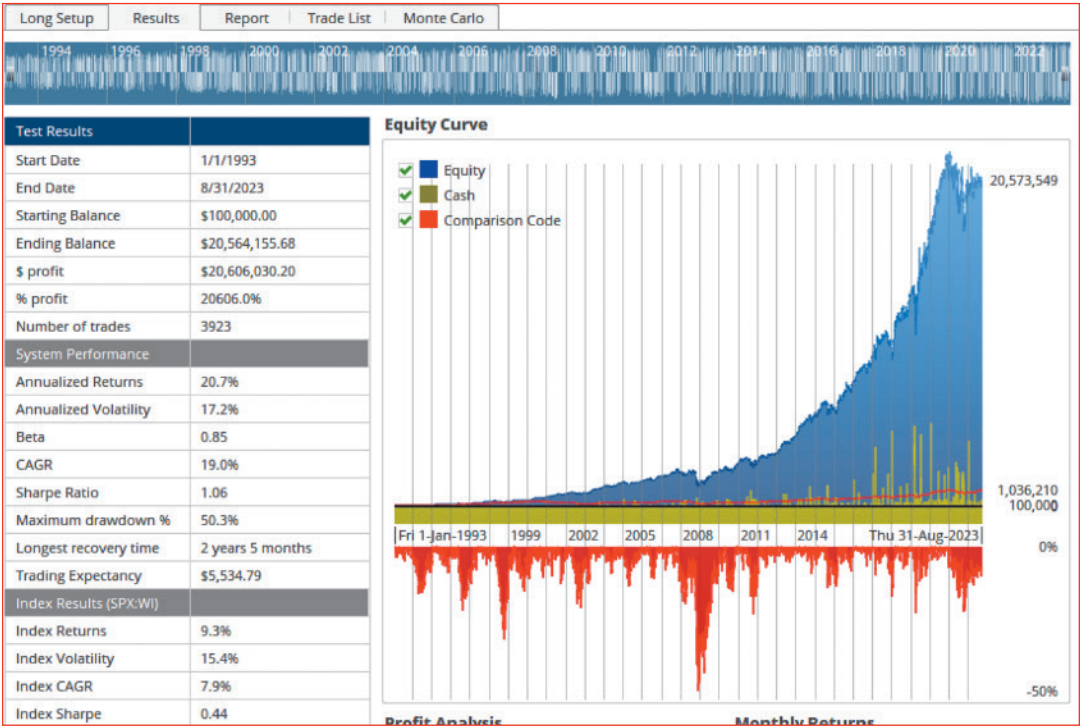


FIGURE 3: ADX+MACD+VPCI SYSTEM ON SPX COMPONENT STOCKS, 1/1/1993–8/31/2023. Here, the ADX+MACD+VPCI system is applied to S&P 500 index component stocks instead of to the SPY ETF. The red line represents a buy & hold approach for investing in the S&P 500 index component stocks. The blue mountain chart is the ADX+MACD+VPCI trend system investing in the S&P 500's component stocks. The system gave an annual return of 20.7% compared to the buy & hold return of 9.3%. The yellow bars in the blue mountain chart represent the amount of cash being held in the portfolio at a given date.

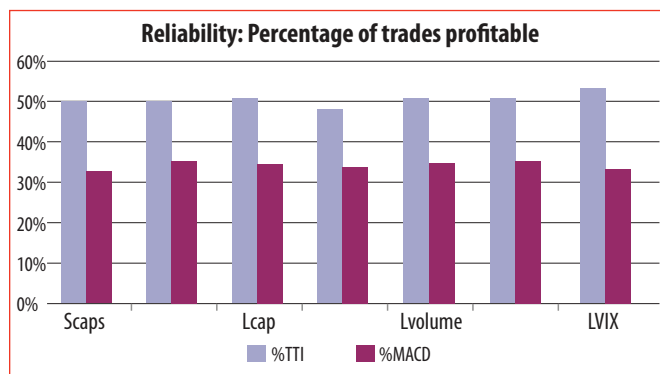


FIGURE 4: INDICATOR COMPARISON, MACD VS. TTI, PERCENTAGE OF PROFITABLE TRADES. In testing, the TTI produced more dependable signals than the MACD did. All 60 of the securities tested demonstrated superior profitability with the trend thrust indicator signals.

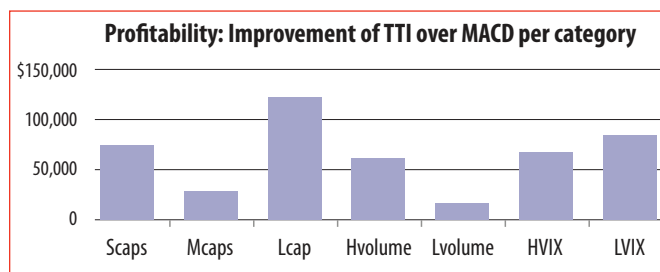


FIGURE 5: DIFFERENCE IN PROFITABILITY IN DOLLAR TERMS. This graph (reproduced from the earlier article in S&C on the trend thrust indicator, as was Figure 4) gives a glimpse at the profitability of signals from the TTI (an indicator based on the MACD but enhanced with volume information) across the categories of large-, mid-, and small-cap stocks, high-volume and low-volume stocks, and high-volatility and low-volatility stocks.

system exhibited much smoother performance with significantly lower capital drawdowns. The VPCI system's worst drawdown was only -2.71% , compared to the underlying investments' worst year of -22.81% , marking a substantial difference in max drawdown.

The annual returns for each strategy are shown in Figure 2, with only two losing years for the system with VPCI, 2000 and 2002. Notably, during this early-2000 period, cash earned favorable interest rates. Had the cash been deployed in T-bills while not employed by the system in the SPY, the system would not have experienced a single losing year.

In summary, the original ADX+MACD strategy incurred significant losses when trading the SPY. Incorporating volume confirmation via OBV notably mitigated these losses. And swapping out OBV with the VPCI within the trading system produced even *better* results—essentially transforming the original losing system trading the SPY into a risk-averse portfolio powerhouse with the ADX+MACD+VPCI combination.

REPLACING THE SPY WITH SPX COMPONENT STOCKS IN THE SYSTEM

Now, let us switch gears and consider the potential of employing the ADX+MACD+VPCI strategy to more recent data. We will explore this scenario next.

But first, let's examine why the original ADX+MACD combo failed when applied to the SPY.

The ADX+MACD trading system was engineered to pinpoint robust trends. However, broad markets, by their nature, encompass numerous stocks across diverse industries, styles, and factors. As a result of this diversity, broad markets lack the pronounced trends typically observed in individual stocks.

With this in mind, what tests found to be a winning system is the exact same system—the ADX+MACD+VPCI—however, instead of trading the SPY ETF, we directed the system towards the components of the S&P 500 index, meeting the identical ADX+MACD+VPCI system's criteria. This change to investing in the S&P 500 components versus the index makes a considerable difference.

Using the ADX+MACD+VPCI model with S&P 500 component stocks for this new test, we allocate 5% to positions in S&P 500 components meeting the criteria of $ADX > 30$, MACD crossover, and VPCI confirmation. We then sold these positions when the VPCI signaled contradiction, just like with the original system trading SPY. Sale proceeds were then immediately used to purchase other stocks meeting the screening criteria. If there were still excess sale proceeds after taking 5% positions in the passing securities, the remaining funds were held in cash. This study was updated to August 31, 2023.

First, notice in Figure 3 that over this period (1993–8/31/2024), the SPX appreciated by 9.3% annually. Our \$100,000 investment in 1993 grew to a tad over \$1 million through a buy-and-hold strategy investing in the SPX, represented by the red line in the graph. Meanwhile, the VPCI trend system (the blue mountain chart), now investing in the S&P 500's passing components, posted an annual return of 20.7% compared to the SPX's buy-and-hold return of 9.3%. The yellow bars within the blue mountain chart represent the amount of cash being held in the portfolio at

The VPCI reconciles volume and price by considering their proportional weights, thus confirming trend momentum.



a given date. To reiterate, this is the same ADX+MACD+VPCI trading system, now applied to the components of the S&P 500 index instead of applied to the SPY.

REPLACING THE MACD WITH THE TTI IN THE SYSTEM

Switching gears once again, in my August 2011 S&C article that I referred to earlier, I demonstrated how the TTI (trend thrust indicator) vastly outperforms MACD indicator. I'll summarize the conclusion of that study next.

Understanding that stocks trend roughly one-third of the time, we recognize that MACD crossover signals align well with major stock trends. However, when the MACD is enhanced with volume data to create the TTI indicator, reliability soars from 34.6% to over 51.6%.

Even in nontrending price scenarios, volume flows continued to validate price movements, keeping investors out of weaker trends and keeping them in strong trends longer.

Leveraging this insight, TTI produces more dependable signals. All 60 of the securities tested demonstrated superior profitability with the TTI indicator signals compared to MACD alone (Figure 4).

Regarding profitability, greater *reliability* significantly begets greater *profitability*, as one might expect. You can see this demonstrated in Figure 5, which shows the profitability in dollar terms of MACD signals versus the TTI signals across different categories of stocks—small-, mid-, and large-cap stocks, high- and low-volume stocks,

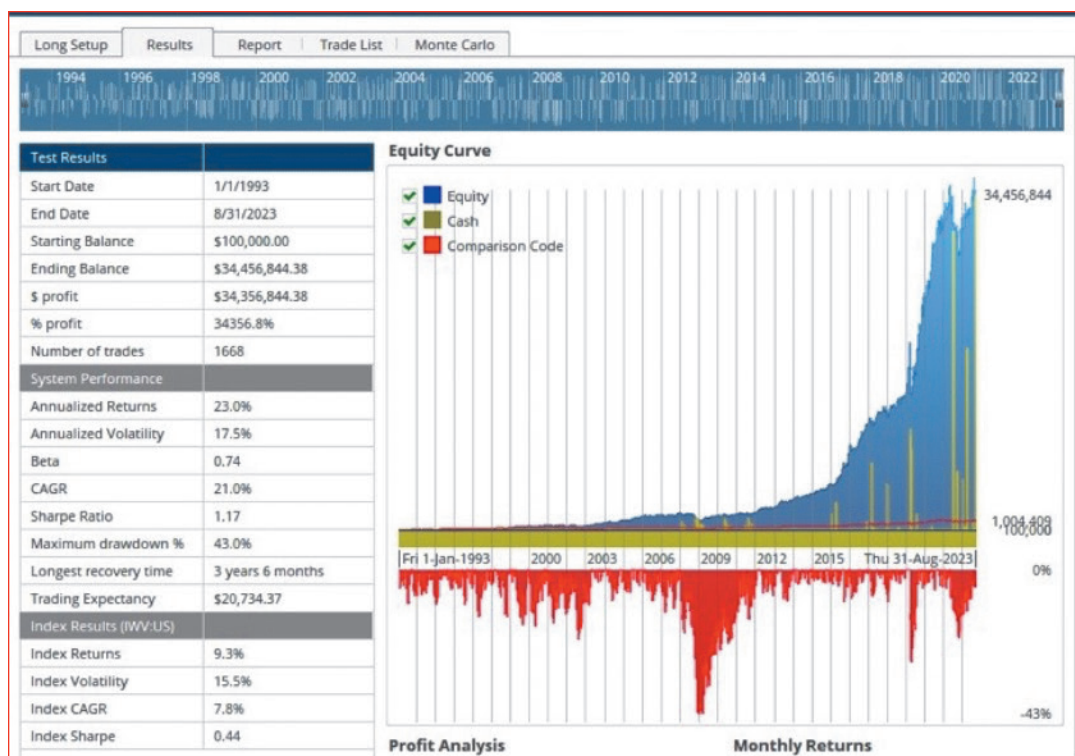


FIGURE 6: ADX+TTI+VPCI SYSTEM ON SPX COMPONENT STOCKS, 1/1/1993–8/31/2023. This shows results and metrics for the ADX+TTI+VPCI combo system applied to a portfolio of individual component stocks of the S&P 500 index, whereas Figure 3 shows the ADX+MACD+VPCI system over the same test period and also applied to S&P 500 component stocks. Most of the metrics for the system using TTI are strongly improved over the metrics and results seen in Figure 3.

and high- and low-volatility stocks. (This graph is from my 2011 S&C article on the trend thrust indicator, thus, the test period is again from then.)

Given these results, the question often asked of me is, *Why not swap out the MACD with the TTI in my VPCI trend-following system?*

Earlier, Figure 3 showed the ADX+MACD+VPCI system results (through 8/31/2023). Now, we'll *replace the MACD with the TTI in the system* and repeat the test.

Figure 6 shows the results. You can compare the metrics against those in Figure 3.

Notice the return is improved—the ADX+MACD+VPCI system returned \$20.5 million compared to a little over \$34 million from the ADX+TTI+VPCI system, raising the volume-confirmed trend system's annualized return to 23% from 20.7%, a 2.3% improvement in alpha. The similarities in total return can be explained by the VPCI being the sell trigger employed by both systems. However, there are a couple of more dramatic differences to note that stem from VPCI and TTI being more aligned, as both TTI and VPCI utilize volume asymmetry within their logic.

The first major difference comes in the form of turnover. There are fewer trades utilizing TTI in the system: 3,923 for the MACD system versus only 1,668 trades for the TTI system. This lower turnover keeps the portfolio much



Stocks trend roughly one-third of the time.

TRADE BRILLIANTLY

Futures and forex are now available on thinkorswim® at Schwab.

Trading at Schwab is powered by Ameritrade, giving you access to markets around the clock, even when equities markets are closed.

- Enhance your trading experience with more products for a range of strategies.
- Deepen your knowledge with our curated online insights and education.
- Get support from trading specialists ready to help with your strategies—no matter how complex.

Trade brilliantly with Schwab.



Powered by Ameritrade™



Named Best Investing Platform Overall
and for Stock, Options, and Forex Trading

Schwab.com/Trading

U.S. News & World Report's Best Investing Platforms award was given on 4/8/2024 and is for 2024-2025. The criteria, evaluation, and ranking were determined by U.S. News & World Report. See <https://money.usnews.com/investing/best-brokers/methodology> for more information. Schwab paid a licensing fee to U.S. News & World Report for use of the award and logos. Futures, futures options, and forex trading involves substantial risk and is not suitable for all investors. Please read the Risk Disclosure Statement for Futures and Options [https://www.schwab.com/Futures_RiskDisclosure] prior to trading futures products. Forex trading involves leverage, carries a substantial level of risk, and is not suitable for all investors. Please read the Risk Disclosure for Forex: <https://www.schwab.com/resource/forex-risk-disclosure-statement>. Futures and futures options and forex trading services provided by Charles Schwab Futures and Forex LLC. Trading privileges subject to review and approval. Not all clients will qualify. Charles Schwab Futures and Forex LLC, a CFTC-registered Futures Commission Merchant and NFA Forex Dealer Member, is a subsidiary of The Charles Schwab Corporation. Charles Schwab Futures and Forex LLC (NFA Member) and Charles Schwab & Co., Inc. (Member SIPC) are separate but affiliated companies and subsidiaries of The Charles Schwab Corporation. Equity and index options carry a high level of risk and are not suitable for all investors. Certain requirements must be met to trade options through Schwab. Please read the Options Disclosure Document titled "Characteristics and Risks of Standardized Options" before considering any option transaction. Call Schwab at 1-800-435-4000 for a current copy. Investing involves risk, including, for some products, more than your initial investment. Access to Electronic Services may be limited or unavailable during periods of peak demand, market volatility, systems upgrade, maintenance, or for other reasons. © 2024 Charles Schwab & Co., Inc. All rights reserved. Member SIPC. (0624-33D2) ADP124635-00

more invested. (The portfolio's percent cash is represented by the yellow bars within the mountain charts.) However, despite significantly higher equity allocations in the TTI system, the volatility remains around 17.5%. While the volatility is nearly a clone, another popular method to measure risk is not identical—the *beta* in the MACD system was 0.85 versus only 0.74 for TTI system. This demonstrates a significant drop in the risk assumed with TTI. This may be surprising, as a more fully invested portfolio typically assumes more risk. Despite being mostly fully invested, the maximum drawdown actually drops from 50.3% with MACD to 43% with TTI. Thus, TTI improves the system both on an absolute and risk-adjusted return basis. This is fully evident in the Sharpe ratio statistic. The original ADX+MACD+VPCI system produced an outstanding 1.06 Sharpe ratio but the ADX+TTI+VPCI system bests it again with a Sharpe ratio of 1.17.

USING STRONGER-TRENDING NDX INDIVIDUAL STOCKS

Finally, let us do this same test again, but this time, using stocks that typically have even stronger trends than the components of the S&P 500. In Figure 7 we employ the NDX components instead of the SPX components. The NASDAQ-100 index has significantly outperformed the S&P 500 index over the last couple of decades. But what makes this study even more interesting is that these NASDAQ-100 issues exhibit greater volatility and trending patterns. These qualities are preferable in a trend-following system.

As seen in Figure 7, \$100,000 invested (buy & hold) in NASDAQ-100 index component stocks grows to \$4.1 million, while the ADX+TTI+VPCI system applied to NDX component stocks grows to a whopping \$107 million. That equates to an average annualized return of 16.5% for buying & holding NDX stocks versus an average annualized

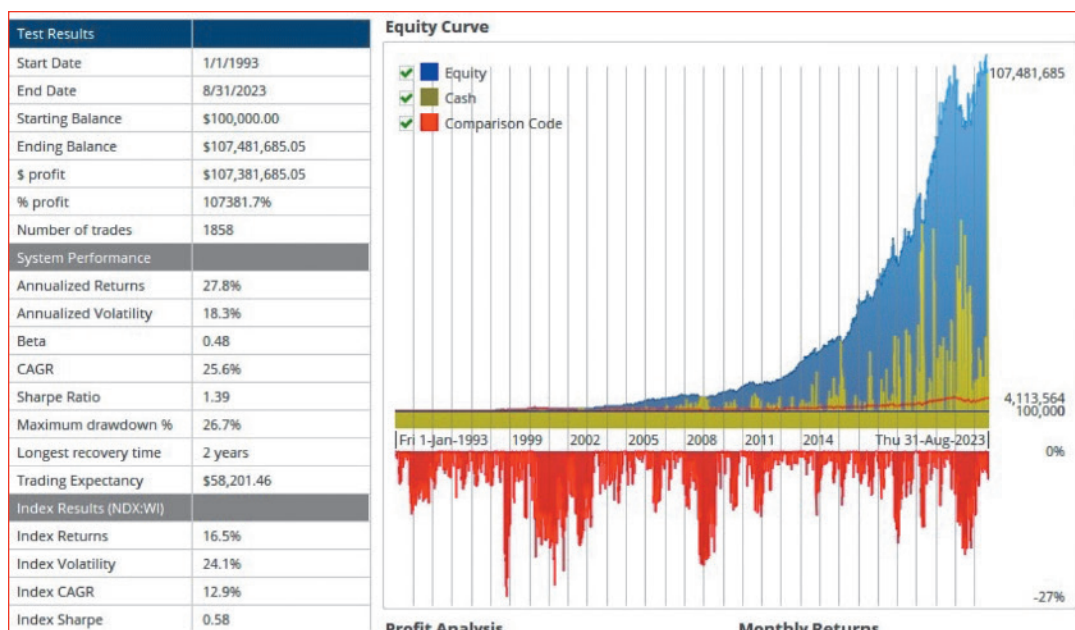


FIGURE 7: ADX+TTI+VPCI SYSTEM ON NDX COMPONENT STOCKS, 1/1/1993–8/31/2023. This shows results and metrics for the same system as in Figure 6, only this time using NDX component stocks, based on the idea that stronger-trending stocks may give better results for the trend-following system. The return significantly beat the returns from the NDX buy & hold approach. And compared to the same system tested on SPX component stocks in Figure 6, the return seen here for the ADX+TTI+VPCI system applied to NDX stocks is 27.8%, versus a 23% return in Figure 6 for the system applied to SPX component stocks.

return of 27.8% for the ADX+TTI+VPCI trend-following system. Meanwhile, volatility drops from 24% for NDX stocks to just 18.3% in the ADX+TTI+VPCI trend system with a beta under 0.5! Perhaps most importantly, from a practical behavioral finance perspective, the recovery time in the volume-infused trading system falls to just two years as opposed to well over a decade of getting “back to even” buying and holding the NDX. The lower risk and higher returns of the ADX+TTI+VPCI system prove out in the Sharpe ratio, with 0.58 for the buy-and-hold approach versus a massive 1.39 Sharpe ratio for the trend system using TTI for volume confirmation.

Applying the ADX+TTI+VPCI system to the NASDAQ-100 component stocks versus the S&P 500 index component stocks raises the annualized return from 23% to 27.8%, boosts the Sharpe ratio from 1.17 up to 1.39, and even improves the recovery time from 3 ½ years to just 2 years.

Continued on page 21

Both TTI and VPCI utilize volume asymmetry within their logic.



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, where she also works as a broker. She has written five books on futures and options trading, with the latest being Trading Commodity Options...With Creativity (July 2020), as well as A Trader's First Book On Commodities (third edition, October 2017) and Higher Probability Commodity Trading (July 2016). Garner also authors widely distributed e-newsletters; for a free subscription, visit www.DeCarleyTrading.com. To submit a question, email her at info@carleygarnertrading.com or via www.DeCarleyTrading.com. Selected questions will appear in a future issue of S&C.



Carley Garner

COPPER CORRELATION

What is the correlation, if any, between the stock market and copper prices?

In the good ol' days, copper was known as Dr. Copper because it was believed to be an economic bellwether. Historical data goes against that premise, but it is a compelling predictor of stock market moves. If we are talking about day-to-day ebb and flow, the relationship between the S&P 500 and copper is casual or nonexistent. However, when it comes to the major turning points, they are relatively synced; yet copper is generally a few steps ahead of stocks. In fact, the track record is so compelling that I would say that similar to the manner in which the yield curve is predictive of recessions, dramatic copper reversals are indicative of stock market trend changes. If this pattern continues to perform as it has been, the abrupt late-May copper sell-off should be considered a signal for market participants to focus on playing defense rather than offence.

The last three significant corrections in stocks were preceded by a significant copper market top. Specifically, the corrections occurring in early 2018, the spring of 2020, and the end of 2021 all occurred on the heels of copper weakness. In these examples, copper futures hit the wall anywhere from a few

months to several months prior to equity market weakness; so, it is not necessarily immediate, but the phenomenon has been habitual. We see the same type of copper leadership on the upside too; in July 2021, copper futures found a bottom and the S&P 500 followed in October of the same year.

Most market participants probably aren't trading copper directly, but the reality is that anyone holding equities is indirectly exposed to what happens in copper. That said, commodity speculators are now

If we are talking about day-to-day ebb and flow, the relationship between the S&P 500 and copper is casual or nonexistent.

offered a much more efficient suite of copper products than was the case in years past. Further, the option market is far more liquid than it once was. When I entered the commodity industry in the early 2000s, there was a relatively large futures contract with options written against it, but getting fair fills in copper options was nearly impossible and the futures themselves were of the "big risk" variety. Thus, they were out of reach for most retail

traders.

Today, the CME Group's COMEX exchange lists three assorted sizes of copper futures with options written against the original, larger contract. Unlike twenty years ago, copper options can be traded somewhat efficiently. Copper isn't the most liquid option market, but the fill quality is acceptable. The futures contracts are sized at 25,000 pounds (original full-sized contract), 12,500 pounds (mini-sized contract), and 2,500 pounds (micro-sized contract). The full-sized margin is currently \$6,700 and goes down incrementally per contract according to size. For example, the micro contract is margined at just \$605 while the mini is \$3,355. The smaller contracts, particularly the micro, are great vehicles for retail traders to participate in copper without risking the loss of their clothing.

To put the leverage into perspective, the original 25,000 lb contract has a notional value of \$112,500 if copper is priced at \$4.50. Thus, with a margin requirement of under \$7,000 to make or lose money based on a contract valued at over \$110,000, it is easy to see how one could get into trouble. The micro contract would have a value of \$11,250 if copper was priced at \$4.50; the leverage remains the same ratio, but a \$600

Continued on page 39



Not All Is What We Expect

Theory Versus Reality

Are your expectations in line with reality? Here's a look at some traditional market beliefs and whether such scenarios tend to play out as expected.

by Perry J. Kaufman



you are as cynical as I am, you won't be surprised that some "market lore" turns out not to be very reliable. Beginning traders may accept these common beliefs, but as you gain experience, the cracks become more obvious.

In this article, I will discuss a few of the old rules and look at whether they hold water. But first, a reminder that all is not what we expect. In Nassim Nicholas Taleb's book *The Black Swan*, he shows us the difference between a statistician and a trader. Here is the example scenario:

Say you flip a coin 99 times and get "heads" each time. Say you ask both a statistician and a trader, "What are the chances of another 'head'?" What do they answer? The statistician says "50%." The trader says "100%."

The statistician may be theoretically correct, but the trader is more realistically correct. Why? In this scenario, the odds show us the coin is not true ... theory versus reality.

Let's look at some practical examples.

THEORY: THE NEXT PRICE SHOCK WILL GIVE YOU A PROFIT

Do 50% of the price shocks give you a profit? If the last one was a profit, will the next be a loss? I'm sure we all know from experience that prices shocks are more likely to cause a loss. But what are the odds? Let's look at the S&P ETF SPY as an example and limit our lookback to the period between July 2019 and March 2023, when the Fed was raising interest rates. We will assume that most investors are long, but we will use the best moving average lookback length for the SPY, 110 days, to decide their position. An uptrend means they are long, a downtrend, not-so-long. We will judge a price shock by a 1-day move greater than 2.5 times the average true range.

SPY price shocks

Figure 1 shows the net effect of price shocks on our SPY

MICROSOFT EXCEL

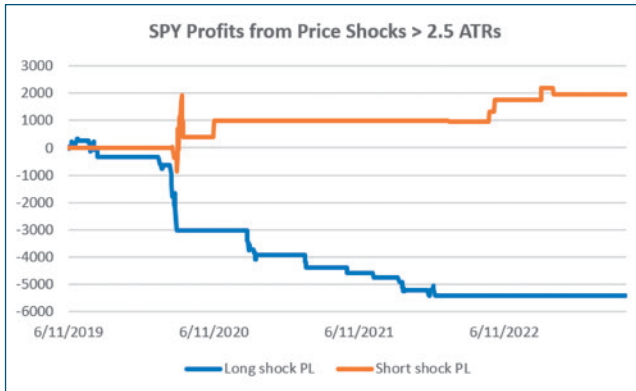


FIGURE 1: PRICE SHOCKS, SPY. Profits and losses from price shocks for SPY.

trend position. The blue line shows that price shocks continually hurt long positions, while the orange line shows mostly gains if you were short. This means that most shocks caused prices to drop. Not a surprise—most traders are long.

Between July 2019 and March 2023 there were 66 shocks greater than 2.5 ATRs, 45 of them while we were long and 21 while we were short. That is 68% against a long position. The cumulative loss was \$5,686 for a \$10,000 investment. *Buyer beware.*

Two-year treasury note futures price shocks

Let's look at two-year treasury note futures, which were volatile during the July 2019–March 2023 Fed action. If you were watching the market then, you could see that traders were fighting the Fed over when the rate hikes would end. Traders were optimistic that every Fed meeting would announce the end of rate increases. They had been wrong about it, but that had not changed their optimistic attitude. That means they were long futures.

Figure 2 shows a very different pattern than we saw in SPY. Price shock results have been volatile. Neither longs nor shorts did well, both showing net returns near zero from price shocks after being on the right side

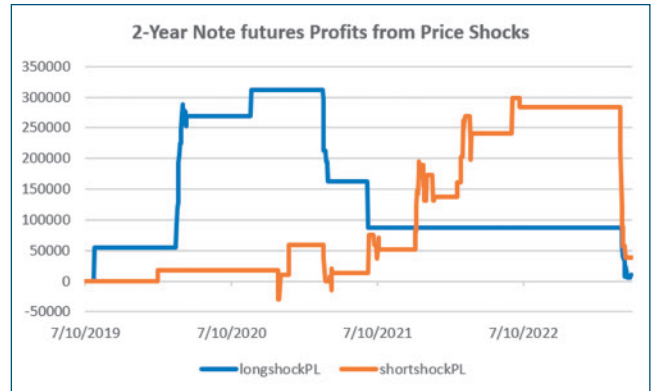


FIGURE 2: PRICE SHOCKS, T-NOTES. Profits and losses from price shocks in the two-year treasury notes market.

of announcements, more so for traders holding shorts (favoring higher rates). *Volatile price moves can play havoc with your equity.*

For two-year notes, we used the same 2.5 ATR factor to identify price shocks but changed the trend to 60 days to recognize that interest rates have more trend than equity index markets.

The code given in the sidebar, “Price Shock Analysis, In EasyLanguage Code,” will allow you to test any combination of trend speed, volatility, and markets.

Can you avoid these price shocks?

The only way to avoid a price shock is to use a strategy that is out of the market a good percentage of the time. If you are out of the market 50% of the time, you (theoretically) reduce your chances of a shock by 50%. Otherwise, you need to accept the volatility as the cost of trading and the reason why futures traders hold more than 50% in reserve.

THEORY: DIVERSIFICATION REDUCES RISK

It is true that diversification reduces risk, but only when you don't need it. We see this every time there is a crisis. *Money moves the market.* When traders need to cover losses, they exit other positions, causing those prices to reverse.

Let's look at three cases: the collapse of the internet bubble in 2000, the financial crisis of 2008, and the trade war at the end of 2019. These three periods in the market are highlighted in Figure 3.

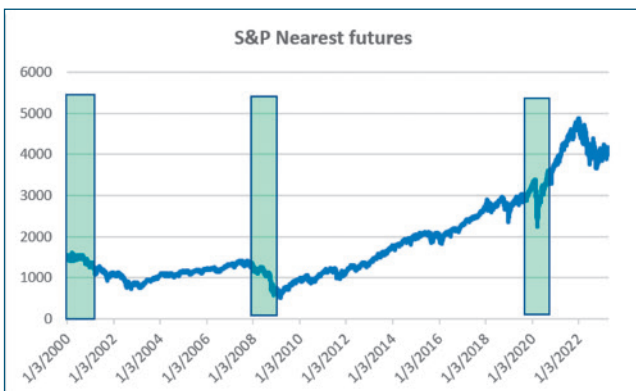


FIGURE 3: S&P FUTURES. A graph of S&P futures highlights the internet bubble, the financial crisis, and the trade war.

I will discuss a few of the old rules and look at whether they hold water.



FIGURE 4: CORRELATION IN SOME FUTURES MARKETS, DOT-COM ERA. At the end of the internet bubble in 2000, the S&P, DAX, and euro moved together. T-notes moved in the opposite direction at first.



FIGURES 5: CORRELATION IN SOME FUTURES MARKETS, FINANCIAL CRISIS ERA. During the financial crisis of 2008, we see a similar pattern as in Figure 4, although the euro is muted. We don't see much diversification here.

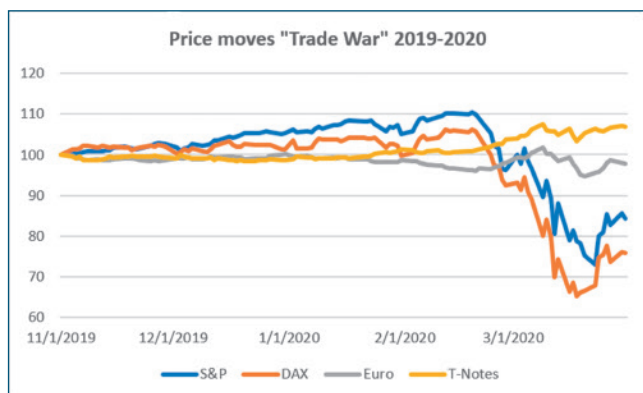


FIGURE 6: CORRELATION IN SOME FUTURES MARKETS, TRADE WAR ERA. During the short-lived trade war starting in late 2019 but having the most impact in March 2020, it appears the DAX became highly correlated with U.S. equity markets. The euro again has a similar but muted response.



FIGURE 7: CORRELATION IN SOME FUTURES MARKETS, FINANCIAL CRISIS ERA. Rolling 20-day correlations are shown here for the DAX, euro, and T-notes (a reversed plot). In mid-2008, all four markets (DAX, euro, T-notes, and S&P) posted over a 60% correlation, offering little diversification.

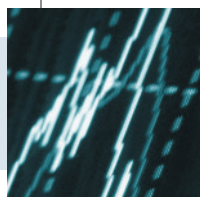
We can see the similarity of price moves simply by charting the S&P along with the DAX (a stock market index consisting of 40 German blue chip companies), the euro currency, and the 10-year T-notes—all futures. We would like to believe that they offer portfolio diversification.

Starting with the end of the internet bubble in 2000, Figure 4 shows that the S&P, DAX, and euro moved together, while T-notes appear to move in the opposite direction. But as stock prices decline, interest rates fall to compensate. A rising T-note price is correlated to falling equity prices; therefore, we should see all four of these prices moving in a highly correlated pattern.

Moving to the financial crisis of 2008, we see a similar pattern in Figure 5, although the euro is muted. The S&P and DAX fell, interest rates rose, and the dollar fell slightly. Not much diversification to be found.

The last example was the short-lived trade war, starting in late 2019 but having the most impact in March 2020, shown in Figure 6. It seems that the DAX has become highly correlated with the U.S. equity markets, as we can see in the three charts. The euro again has a similar but muted response, and interest rates fall to compensate.

Another way of seeing relative price moves is to find the rolling 20-day correlation of markets against the S&P. The DAX, euro, and T-notes are shown in Figure 7 for the year 2008. The DAX correlation is near 90%, offering no diversification. T-notes (reversed to correct the relationship) also has periods over 80%, while the euro is slightly less correlated. In mid-2008 all four markets posted over a 60% correlation. That offers a few days of diversified movement, but no real value for a macrotrend trader.



Do 50% of the price shocks give you a profit?

“It looks OK to me”

Why would I care that markets move together if I’m on the right side? Because when the price changes direction, all these markets will move together. That could be a large loss.

How to trade a crisis

If you agree that successfully achieving diversification during a crisis is a problem, what is the solution? Reducing position size is the simplest and likely to be most effective. How do you recognize that we’re in a crisis? The same way we just looked at the markets—high correlations. You will also find that the volatility of returns in your portfolio will increase. When markets move the same way, you get bigger gains and bigger losses. If you reduce your position size when your portfolio returns increase, you can avoid some of the losses that come with price shocks.

The other approach is to diversify into different trading strategies. One trend, one arbitrage, and one short-term pattern recognition are more likely not to react the same way at any moment in time.

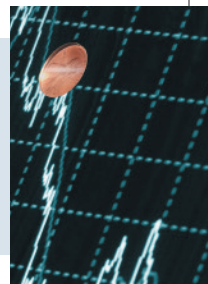
THEORY: IF YOU HAVE TESTED CORRECTLY, YOU CAN PREDICT FUTURE PERFORMANCE

Testing is important, and there are few alternatives for deciding if your strategy works. Using self-adjusting measures helps. Your position size should be inverse to price volatility. A profit target or stop-loss should also move in and out as volatility changes, and leverage should vary with the volatility of your portfolio returns.

Those rules will help make your system adapt to changes and make your theoretical results more realistic. But once you start trading, expect your returns to be less than your test returns, and expect your risk to be much greater than the risk you saw during testing. If you had a return-to-risk ratio during testing of 2.0 (very good), then expect an out-of-sample ratio of 1.0. When you start trading, that ratio will drop to 0.75. Still, it’s a good payout and twice that of the S&P.

The reason behind the decay in performance is simply that new data is different from old data, no matter how much old data you used. And using more old data is better. Results will not be as good, but they will be more realistic. Even with that, there is no way to predict all combinations of price moves, so the future will always be a surprise. As time goes forward, there will be longer runs of profits and longer runs of losses, the same as flipping a coin more times.

If you agree that achieving diversification during a crisis is a problem, what is the solution?



THEORY: MORE COMPLEX SYSTEMS ARE MORE ACCURATE

More complex systems have more working parts. In theory, they seem to account for more situations, but each rule or relationship must be tested and verified. Each rule targets a specific pattern or event. Those rules rely on recognizing when that pattern will appear again and acting in a timely manner.

Complex systems depend on the interaction between variables. The number of combinations and patterns increase exponentially. I believe that their ability to predict price moves decreases exponentially. That’s just my opinion.

What I do know is that, when performance is not what was expected, uncovering the problem in a complex system is going to be very, very difficult. That’s why I prefer testing one feature at a time so that I can understand how it contributes to the decision and later on I can see if that particular feature is performing correctly.

How can you tell when you have overtuned the system? The easiest way is when the return-to-risk ratio is above 3. While it could be a brilliant strategy, it is more likely an error. If you’re mathematically inclined, check the kurtosis of the returns. A sound and profitable system would have a kurtosis of 3. If you get something above 7 you have overfit the data.

UNREALISTIC EXPECTATIONS

Technology can be our enemy as well as our friend. One of the problems with putting charts on the screen is our need to perform based on trends and movements in the past. “Had we only bought at the bottom.” “If we had held that trend and not exited.” Markets going forward are not going to be the same as the past.

Just a few reminders:

- We have unrealistic expectations caused by optimism, overzealous testing, hindsight, and incorrect interpretation of test results.
- Don’t mistake luck for skill. A windfall profit is good, but it’s not the norm. Don’t count on it happening again.

- Risk is more important than return. Yes, we want a profit, but we cannot get there without risk control. Learn to accept risk but deleverage when the risk increases.
- Money moves the market. It defies fundamentals. During a crisis, all markets move together. System diversification can reduce risk more than market diversification.
- When creating a system, use as much data as possible and as few rules as possible. Results will be lower, but more realistic.
- Try to diversify into different strategies, perhaps each with a different time horizon.
- Be sure you have enough reserves to absorb a price shock. Don't overleverage.

Learn to accept risk but deleverage when the risk increases.



Perry J. Kaufman is a trader and financial engineer. He is the author of many books on trading and market analysis, including the sixth edition (2020) of Trading Systems and Methods (with the first edition published in 1978 as a seminal book in the field of technical analysis), as well as Kaufman Constructs Trading Systems (2020), and Learn To Trade (2022). For questions or comments, please go to www.kaufmansignals.com.

PRICE SHOCK ANALYSIS, IN EASYLANGUAGE CODE

```
// Price shock analysis applied to futures (ES and CL) and
// ETFs
// Records only 1-day shocks
// Copyright 2016–2024, P J Kaufman. All rights reserved.
```

```
input: trendperiod(110), shockfactor(2.5), lag(20),
longonly(false),
usefutures(false), printoption(false);
vars: ATRperiod(20), MA(0), size(0), adate(" "), ATR(0),
futuresinvestment(25000),
stockinvestment(10000), nshocks(0), nlong-
shocks(0), nshortshocks(0),
netPLlongshocks(0), netPLshortshocks(0), to-
dayPL(0), longPL(0), shortPL(0),
totalPL(0);
```

```
MA = average(close,trendperiod);
if usefutures then
    size = futuresinvestment/(avgtruerange(ATRpe-
riod)*bigpointvalue)
else
```

```
    size = stockinvestment/close;
ATR = avgtruerange(ATRperiod);
```

```
// Trend position
```

```
    if marketposition <> 1 and MA > MA[1] then begin
        buy to cover all contracts next bar on open;
        buy size contracts next bar on open;
    end
    else if marketposition <> -1 and MA < MA[1]
then begin
    sell all contracts next bar on open;
    if longonly = false then sell short size contracts next
bar on open;
end;
```

```
// tally shocks
```

```
    if ATR[lag] <> 0 and truerange > shockfactor*ATR[lag]
then begin
        nshocks = nshocks + 1;
```

```
        if marketposition > 0 then begin
            nlongshocks = nlongshocks + 1;
            netPLlongshocks = netPLlongshocks +
size*(close - close[1])*bigpointvalue;
        end
        else if marketposition < 0 then begin
            nshortshocks = nshortshocks
+ 1;
            netPLshortshocks = net-
PLshortshocks + size*(close[1] - close)*bigpointvalue;
        end;
    end;
```

```
totalPL = netprofit + openpositionprofit;
todayPL = totalPL - totalPL[1];
if marketposition > 0 then
    longPL = longPL + todayPL
else if marketposition < 0 then
    shortPL = shortPL + todayPL;
```

```
    if printoption then begin
        adate = ELdate tostring(date);
        if currentbar = 1 and printoption then
            print(file("c:\TradeStation\Price_Shock_Analysis.csv"),
                "Date,Close,TRange,facto-
r*ATR,MA,Shocks,nlong,nshort,LongPositionShockPL,"
                "ShortPositionShockPL,T
otalLongPL,TotalShortPL,totalPL");
        if ATR[lag] <> 0 then
            print(file("c:\TradeStation\Price_
Shock_Analysis.csv"),adate,"",close:8:4,"",
                truerange:8:3,"",
                shockfactor*ATR[lag]:8:3,"",MA:8:4,"",
                nshocks:8:0,"",nlong-
shocks:8:0,"",nshortshocks:8:0,"",netPLlongshocks:8:2,
                "",
                netPLshortshocks:8:2,"",
                longPL:8:2,"",shortPL:8:0,"",totalPL:8:2);
    end;
```


FURTHER READING

Kaufman, Perry J. [2022]. *Learn To Trade*, Amazon.
—— [2020]. *Trading Systems and Methods*, 6th Edition, Wiley.
—— [2020]. *Kaufman Constructs Trading Systems*

(print and ebook editions), Amazon.
Kaufman, Perry J., and Alberto Vivanti [1997]. *Global Equity Investing*, Wiley.

Find similar articles online at [Traders.com](https://www.Traders.com)



TOMASINI

Continued from page 7

have found that prices always move within oscillation channels that we can identify with various graphical (two overlapping trendlines?) and algorithmic tools (an oscillation band with two standard deviations from a regression line?). If trends exist in prices, an appropriate way to represent them is through the oscillation channel.

This leads to an important consequence: If it is the channel that works and not the trendline, which is merely a part of a channel, then traders should shift their focus from the trendline to the channel and the breakout of prices from the channel, rather than on how to draw the trendline. They should not be overly concerned with all the rules codified by the fathers of technical analysis over time. If this view of trendlines is true, it would still be a significant validation for the

If trends exist in prices, an appropriate way to represent them is through the oscillation channel.

pioneers of technical analysis: With the tools available to them, armed with pencil and ruler, they weren't too far from the truth.

Find similar articles online at [Traders.com](https://www.Traders.com)



DORMEIER/VOLUME CONFIRMATION

Continued from page 14

CLOSING WORDS

This article reintroduces the volume price confirmation indicator, or VPCI, and its effectiveness in validating trends, as well as the subsequent enhancement of the MACD indicator to create the trend trust indicator, or TTI. It explores swapping out the MACD with TTI within the VPCI trend system. In the study, the ADX+TTI+VPCI combo outperformed the other strategies tested, yielding significantly higher returns and enhanced reliability, while also substantially improving the risk profile.

Overall, these studies help to demonstrate the power of volume when correctly used as a factor in portfolio construction.

Next time, in a follow-up article, I'll write more about employing the power of the volume factor within momentum analysis.

Buff Pelz Dormeier, CMT, is chief technical analyst for Kingsview Partners and an index specialist for MonarchFunds ETFs. A volume expert, he is the developer of many volume-weighted indicators and cap-weighted volume-based breadth indicators. His new book, released in July 2024, is titled The Volume Factor, available through his website, [BuffDormeier.com](https://www.BuffDormeier.com).

The trend thrust indicator (TTI) improves the ADX+MACD+VPCI system both on an absolute and risk-adjusted return basis.



See our *Traders' Tips* section of the magazine beginning on page 46 for implementation of Buff Dormeier's technique in various technical analysis and trading platforms. Code found in the *Traders' Tips* section of the magazine is posted to [Traders.com](https://www.Traders.com) in the *Traders' Tips* section of the website.

FURTHER READING

Dormeier, Buff Pelz [2024]. *The Volume Factor: Goals Based Investment Strategies To Achieve Successful Investment Outcomes*, BuffDormeier.com.
—— [2012]. *Investing With Volume Analysis: Identify, Follow, And Profit From Trends*, FT Press.
—— [2001]. "Buff Up Your Moving Averages," *Technical Analysis of STOCKS & COMMODITIES*, Volume 19: February.
—— [2011]. "Trend Thrust Indicator," *Technical Analysis of STOCKS & COMMODITIES*, Volume 29: August.
—— [2007]. "Between Price And Volume," *Technical Analysis of STOCKS & COMMODITIES*, Volume 25: July.

Find similar articles online at [Traders.com](https://www.Traders.com)





A Comparison Of Tools

Indicators On The Test Bench: Which Price Channel Method Is Most Effective For Trading?

Let's put some popular and useful tools to the test head-to-head to see what may work best for different futures markets.

by Andrea Unger



In this article, we'll be putting to the test three of the most celebrated tools in technical analysis with a particular focus on price channels. Channels create two oscillating bands around the price—an upper and a lower band, each determined by specific parameters. These versatile tools are invaluable for various trading strategies, including setting entry and exit points within a trading system.

We'll be examining three key price channels:

- Bollinger Bands

- Price channel (also known as Donchian channel)
- Keltner channel

OVERVIEW: BOLLINGER BANDS, PRICE CHANNEL, AND KELTNER CHANNEL

Before we delve deeper, let's quickly review each channel technique's features to grasp their construction.

Bollinger Bands: Developed by John Bollinger in the 1980s, this tool calculates the upper and lower bands by adding and subtracting twice the standard deviation from a 20-period moving average, respectively:

$$\text{Bollinger Band upper(lower)} = \text{SMA}(N) + (-) 2 * \text{STD Dev}$$

Price (Donchian) channel: This tool, named after its creator Richard Donchian, determines its bands

by linking the highs and lows over a designated number of periods for the upper and lower bands, respectively:

Price channel (upper) = Highest (high, N)

Price channel (lower) = Lowest (low, N)

Keltner channel: This channel method is similar to Bollinger Bands. Chester Keltner initiated this concept with a simple moving average over N periods. However, rather than using standard deviations for the upper and lower channels, he opted for the range, calculated over the same period as the moving average and multiplied by a specific coefficient (C). In the 1980s, celebrated trader Linda Raschke introduced significant modifications by substituting the range with the average true range (ATR), thus popularizing the version we use widely today.

Keltner channel upper(lower) = $SMA(N) + (-) C * ATR(N)$

Figures 1a, 1b, and 1c show an example of the three price channel methods applied on a 60-minute chart of heating oil futures (@HO).

TESTING THE THREE CHANNEL METHODS IN A TREND-FOLLOWING STRATEGY

Now that we've reviewed the features of each price channel method, next we'll examine whether employing these channels in building a trading system is indeed advantageous.

For our examination, we'll deploy a straightforward trend-following strategy across a wide array of futures, including stock index futures, commodity futures, and currency futures.

This trading system will adhere to these simple rules for all three channel methods:

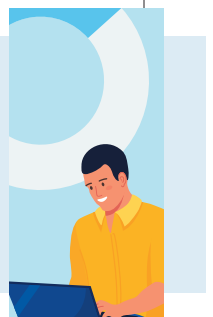
- Go long at the level indicated by the upper channel
- Go short at the level indicated by the lower channel

In this experiment, we won't set any stop-loss or profit target, as it's impractical to establish a one-size-fits-all value for all the futures markets under review given their substantial variances in characteristics and contract sizes. Consequently, each trade will conclude either with the initiation of a counter position or with a



FIGURE 1: BOLLINGER BANDS, DONCHIAN PRICE CHANNEL, AND KELTNER CHANNEL. This shows an example of applying each of the three techniques to a 60-minute chart of heating oil futures (@HO).

In this article, we'll be putting to the test three of the most celebrated tools in technical analysis with a particular focus on price channels.



```

inputs: Periods(20),DevUp(2),DevDown(-2),Coeff_Atr(1);
inputs: BB_ok(1),PC_ok(1),KC_ok(1);

var:UpperBand(0),LowerBand(0);
var: UpperChannel(0), LowerChannel(0);
var: Upper_Keltner_Channel(0), Lower_Keltner_Channel(0);
var: AvgVal(0);

var:okl(true),oks(true),slb(false);

slb=sessionlastbar;

if slb[1] then begin
    okl:=true;
    oks:=true;
end;

//Bollinger Bands
UpperBand = BollingerBand(C,Periods,DevUp);
LowerBand = BollingerBand(C,Periods,DevDown);

//Price Channel
UpperChannel = HighestFC(h, Periods);
LowerChannel = LowestFC(l, Periods);

//Keltner Channel
AvgVal= Average(Close, Periods);
Upper_Keltner_Channel= AvgVal + Coeff_Atr*AvgTrueRange(Periods);
Lower_Keltner_Channel= AvgVal - Coeff_Atr*AvgTrueRange(Periods);

if BB_ok=1 then begin
    if okl then buy next bar at UpperBand stop;
    if oks then sellshort next bar at LowerBand stop;
end;

if PC_ok=1 then begin
    if okl then buy next bar at UpperChannel stop;
    if oks then sellshort next bar at LowerChannel stop;
end;

if KC_ok=1 then begin
    if okl then buy next bar at Upper_Keltner_Channel stop;
    if oks then sellshort next bar at Lower_Keltner_Channel stop;
end;

//exit
input: maxbars_exit(10);

If marketposition>0 and barssinceentry>=maxbars_exit then sell next bar at market;
If marketposition<0 and barssinceentry>=maxbars_exit then buy to cover next bar at market;

setstopcontract;

```

FIGURE 2: CODE FOR CALCULATING CHANNELS. The code in EasyLanguage for MultiCharts sets up the inputs and variables required for calculating the price channels.

timed exit, determined by the number of bars since entry, pegged at 50, which is approximately slightly more than two days.

The trading system will work on a 60-minute time-frame, with the backtest spanning from January 1, 2010 to December 31, 2023.

Now let's dive into some code, starting with outlining the inputs and variables required for calculating the channels. A code listing in EasyLanguage for TradeStation or MultiCharts is shown in Figure 2.

In this initial phase of analysis, we'll be using the standard values commonly recognized for each of the indicators. This includes 20 as the number of periods (labeled "*Periods*"), 2 for the standard deviation in Bollinger Bands (inputs "*DevUp*" and "*DevDown*"), and 2 for the average true range multiplication coefficient for the Keltner channel (input "*Coeff_Atr*").

COMPARISON OF RESULTS PRODUCED BY THE THREE PRICE CHANNELS

See Figure 3 for an overview of portfolio results using standard input values for each of the three price channels methods. Overall, the results across the full portfolio are positive for all three indicators, with the Donchian price channel showing positive performance on every instrument except for copper futures (@HG). Notably, there's a

Bollinger Bands					Price Channel					Keltner Channel				
Market	Start Date	End Date	Net Profit	# Trades	Market	Start Date	End Date	Net Profit	# Trades	Market	Start Date	End Date	Net Profit	# Trades
@CL	08/01/2010 15:00:00	29/12/2023 23:00:00	65,150.00	3812	@CL	08/01/2010 15:00:00	29/12/2023 23:00:00	184,890.00	3119	@CL	08/01/2010 16:00:00	29/12/2023 23:00:00	23,010.00	2909
@HO	08/01/2010 15:00:00	29/12/2023 23:00:00	428,538.60	3594	@HO	08/01/2010 14:00:00	29/12/2023 23:00:00	394,842.00	3025	@HO	08/01/2010 15:00:00	29/12/2023 23:00:00	255,057.60	2977
@RB	08/01/2010 15:00:00	29/12/2023 23:00:00	309,052.80	3618	@RB	08/01/2010 15:00:00	29/12/2023 23:00:00	370,788.60	2978	@RB	08/01/2010 16:00:00	29/12/2023 23:00:00	308,334.60	2965
@GC	08/01/2010 15:00:00	29/12/2023 23:00:00	186,460.00	3797	@GC	08/01/2010 15:00:00	29/12/2023 23:00:00	186,960.00	3130	@GC	08/01/2010 15:00:00	29/12/2023 23:00:00	5,400.00	2830
@PL	08/01/2010 13:00:00	29/12/2023 23:00:00	123,640.00	3462	@PL	08/01/2010 13:00:00	29/12/2023 23:00:00	184,905.00	2961	@PL	08/01/2010 13:00:00	29/12/2023 23:00:00	90,100.00	2689
@ES	08/01/2010 15:00:00	29/12/2023 23:00:00	(99,062.50)	3837	@ES	08/01/2010 15:00:00	29/12/2023 23:00:00	75,925.00	3146	@ES	08/01/2010 15:00:00	29/12/2023 23:00:00	(7,387.50)	2841
@NQ	08/01/2010 15:00:00	29/12/2023 23:00:00	127,260.00	3935	@NQ	08/01/2010 15:00:00	29/12/2023 23:00:00	206,975.00	3159	@NQ	08/01/2010 15:00:00	29/12/2023 23:00:00	151,395.00	2992
@S	11/01/2010 18:00:00	29/12/2023 20:20:00	114,737.50	2708	@S	11/01/2010 20:00:00	29/12/2023 20:20:00	122,187.50	2247	@S	11/01/2010 17:00:00	29/12/2023 20:20:00	78,500.00	2204
@KC	20/01/2010 15:15:00	29/12/2023 19:30:00	185,943.75	1353	@KC	19/01/2010 13:15:00	29/12/2023 19:30:00	234,318.75	1171	@KC	19/01/2010 12:15:00	29/12/2023 19:30:00	83,831.25	1132
@LH	02/02/2010 17:30:00	29/12/2023 20:05:00	42,900.00	670	@LH	05/02/2010 18:30:00	29/12/2023 20:05:00	25,360.00	630	@LH	02/02/2010 17:30:00	29/12/2023 20:05:00	41,540.00	599
@LC	02/02/2010 20:05:00	29/12/2023 20:05:00	41,240.00	678	@LC	02/02/2010 20:05:00	29/12/2023 20:05:00	23,720.00	614	@LC	05/02/2010 16:30:00	29/12/2023 20:05:00	16,960.00	580
@NG	08/01/2010 14:00:00	29/12/2023 23:00:00	48,310.00	4226	@NG	08/01/2010 14:00:00	29/12/2023 23:00:00	70,370.00	3258	@NG	08/01/2010 14:00:00	29/12/2023 23:00:00	9,040.00	3184
@OJ	28/01/2010 15:00:00	29/12/2023 20:00:00	114,322.50	776	@OJ	28/01/2010 15:00:00	29/12/2023 20:00:00	91,755.00	718	@OJ	27/01/2010 20:00:00	29/12/2023 20:00:00	84,645.00	678
@AD	08/01/2010 14:00:00	29/12/2023 23:00:00	(4,710.00)	3430	@AD	08/01/2010 15:00:00	29/12/2023 23:00:00	4,380.00	3049	@AD	08/01/2010 15:00:00	29/12/2023 23:00:00	(15,880.00)	2699
@BP	08/01/2010 10:00:00	29/12/2023 23:00:00	(22,425.00)	3800	@BP	08/01/2010 10:00:00	29/12/2023 23:00:00	912.50	3125	@BP	08/01/2010 10:00:00	29/12/2023 23:00:00	(38,825.00)	2869
@BTC	22/12/2017 10:00:00	29/12/2023 23:00:00	439,725.00	1451	@BTC	22/12/2017 15:00:00	29/12/2023 23:00:00	261,925.00	1267	@BTC	22/12/2017 10:00:00	29/12/2023 23:00:00	289,625.00	1206
@C	12/01/2010 03:00:00	29/12/2023 20:20:00	26,062.50	2818	@C	11/01/2010 14:00:00	29/12/2023 20:20:00	28,887.50	2297	@C	11/01/2010 18:00:00	29/12/2023 20:20:00	29,675.00	2231
@CC	21/01/2010 15:45:00	29/12/2023 19:30:00	56,110.00	1179	@CC	21/01/2010 15:45:00	29/12/2023 19:30:00	43,050.00	1079	@CC	21/01/2010 15:45:00	29/12/2023 19:30:00	21,430.00	1026
@HG	08/01/2010 15:00:00	29/12/2023 23:00:00	(63,462.50)	3580	@HG	08/01/2010 12:00:00	29/12/2023 23:00:00	(16,687.50)	3041	@HG	11/01/2010 03:00:00	29/12/2023 23:00:00	(67,362.50)	2723
@CT	11/01/2010 18:00:00	29/12/2023 20:20:00	115,255.00	2545	@CT	11/01/2010 18:00:00	29/12/2023 20:20:00	181,265.00	2089	@CT	11/01/2010 18:00:00	29/12/2023 20:20:00	140,040.00	2022
@EC	08/01/2010 12:00:00	29/12/2023 23:00:00	1,162.50	3745	@EC	08/01/2010 14:00:00	29/12/2023 23:00:00	15,187.50	3075	@EC	08/01/2010 15:00:00	29/12/2023 23:00:00	(66,200.00)	2854
@SB	19/01/2010 18:30:00	29/12/2023 19:00:00	52,348.80	1274	@SB	19/01/2010 18:30:00	29/12/2023 19:00:00	36,176.00	1184	@SB	19/01/2010 18:30:00	29/12/2023 19:00:00	15,052.80	1117
@SI	08/01/2010 16:00:00	29/12/2023 23:00:00	136,830.00	3749	@SI	08/01/2010 16:00:00	29/12/2023 23:00:00	304,320.00	3048	@SI	08/01/2010 16:00:00	29/12/2023 23:00:00	112,060.00	2713
@TY	08/01/2010 15:00:00	29/12/2023 23:00:00	(9,421.88)	3648	@TY	08/01/2010 15:00:00	29/12/2023 23:00:00	9,625.00	3163	@TY	08/01/2010 15:00:00	29/12/2023 23:00:00	(31,984.38)	2775
@US	08/01/2010 16:00:00	29/12/2023 23:00:00	14,687.50	3651	@US	08/01/2010 16:00:00	29/12/2023 23:00:00	29,437.50	3181	@US	08/01/2010 16:00:00	29/12/2023 23:00:00	(35,718.75)	2842
@W	12/01/2010 20:00:00	29/12/2023 20:20:00	56,962.50	2755	@W	11/01/2010 20:00:00	29/12/2023 20:20:00	44,425.00	2246	@W	11/01/2010 14:00:00	29/12/2023 20:20:00	56,875.00	2258
@JY	08/01/2010 16:00:00	29/12/2023 23:00:00	105,581.25	3458	@JY	11/01/2010 01:00:00	29/12/2023 23:00:00	101,181.25	2966	@JY	08/01/2010 19:00:00	29/12/2023 23:00:00	37,618.75	2730
@FC	02/02/2010 20:05:00	29/12/2023 20:05:00	74,062.50	669	@FC	02/02/2010 20:05:00	29/12/2023 20:05:00	89,337.50	600	@FC	02/02/2010 20:05:00	29/12/2023 20:05:00	34,725.00	585

FIGURE 3: PORTFOLIO RESULTS USING STANDARD INPUT VALUES. Here you see the results for each futures market in the test portfolio using traditional input values for the three types of price channel methods.

stark contrast between the top performer, heating oil (@HO), and the lowest, the British pound (@BP).

The outcomes for the other two indicators (Bollinger Bands and Keltner channels) are more mixed, revealing negative results for certain assets; futures on the S&P 500 (@ES), Australian dollar (@AD), British pound (@BP), copper (@HG), eurodollar (@EC), and U.S. treasuries (@TY and @US) tend not to fare well. This underperformance is likely due to these markets being more prone to mean reversion and less volatility, which doesn't align well with indicators that calculate entry levels based on volatility measures like the standard deviation for Bollinger Bands and the average true range for the Keltner channel.

The table in Figure 4 shows a summary of results for each of the three channel methods based on traditional input values.

ADJUSTING STANDARD VALUES FOR THE THREE PRICE CHANNELS

Now let's explore the impact of adjusting the standard values we've been working with. We'll start optimizing the "Periods" input from 10 to 30, incrementing by 1, and adjust "DevUp" and "DevDown" from 1 to 3 in increments of 0.5, as well as "Coeff_Atr" from 1 to 3, also in steps of 0.1. Figures 5a, 5b, and 5c show an optimization of "Periods," "DevUp," "DevDown," and "Coeff_Atr" inputs.

Figure 6 provides the portfolio results using the op-

Method	NetProfit	Average Trade	# of Trades	Max DD
Bollinger Band	\$2,667,260.82	\$34.10	78,218	-\$229,074.43
Price Channel	\$3,306,419.10	\$50.43	65,566	-\$243,650.83
Keltner Channel	\$1,621,556.88	\$26.48	61,230	-\$273,071.75

FIGURE 4: SUMMARY OF RESULTS USING STANDARD INPUT VALUES.

Here you can compare the results of each of the three channel methods using the standard input values.

timized input values, instead of the original standard values. The results indicate that for the price channel, the standard input of 20 periods yields the highest net profit.

When it comes to the other two volatility-based indicators, it's noteworthy that the most favorable outcomes are achieved by narrowing the bands around the prices (by reducing the standard deviation or the ATR coefficient), and for Bollinger Bands, also by decreasing the number of periods. The logic is straightforward: This

It's noteworthy that the most favorable outcomes are achieved by narrowing the bands around the prices.



Net Profit	Total Trades	% Profitable	Winning Trades	Losing Trades	Max Intraday Drawdown	Periods (UA_Tasc Bollinger Band step2)	DevUp (UA_Tasc Bollinger Band step2)	DevDown (UA_Tasc Bollinger Band step2)
3.711.931,73	238.111	25,37 %	60.410	176.213	-170.146,80	12	1,0	-1,0
3.677.082,15	254.125	25,25 %	64.158	188.267	-189.078,63	11	1,0	-1,0
3.608.726,28	271.201	25,11 %	68.100	201.146	-184.502,58	10	1,0	-1,0
3.576.717,58	218.824	25,75 %	56.345	161.241	-168.312,88	13	1,0	-1,0
3.530.466,55	118.103	28,57 %	33.738	83.748	-212.234,48	23	1,0	-1,0
3.494.586,88	99.140	28,70 %	28.453	70.223	-230.645,20	27	1,0	-1,0
3.477.391,00	83.323	31,15 %	25.951	57.022	-229.342,90	27	1,0	-1,5
3.463.057,28	86.323	31,06 %	26.809	59.149	-221.673,38	26	1,0	-1,5
3.460.340,73	71.697	33,62 %	24.107	47.310	-170.813,93	27	1,0	-2,0
3.459.646,95	98.635	30,99 %	30.564	67.604	-197.892,93	23	1,5	-1,0
Net Profit	Total Trades	% Profitable	Winning Trades	Losing Trades	Max Intraday Drawdown	Periods (UA_Tasc Price Channel_step 2)		
3.339.125,48	73.234	36,60 %	26.807	46.035	-234.644,63	18		
3.306.419,10	65.566	36,83 %	24.149	41.082	-243.650,83	20		
3.305.700,90	62.395	36,87 %	23.002	39.120	-214.688,90	21		
3.280.481,93	69.225	36,64 %	25.363	43.493	-265.952,78	19		
3.146.487,78	78.337	36,29 %	28.425	49.451	-242.923,43	17		
3.056.600,30	59.282	37,20 %	22.052	36.964	-257.939,45	22		
3.004.396,60	83.899	36,19 %	30.367	53.005	-220.590,83	16		
2.948.138,50	130.830	33,88 %	44.330	85.472	-159.113,40	10		
2.916.498,05	56.594	37,49 %	21.216	35.149	-205.673,63	23		
2.882.552,50	110.769	35,07 %	38.852	71.108	-175.734,98	12		
Net Profit	Total Trades	% Profitable	Winning Trades	Losing Trades	Max Intraday Drawdown	Periods (UA_Tasc Keltner Channel_step 2)	Coeff_Atr (UA_Tasc Keltner Channel_step 2)	
2.813.240,53	102.569	32,53 %	33.367	68.648	-230.778,50	22	1,0	
2.797.480,10	99.518	32,38 %	32.227	66.748	-243.373,78	23	1,0	
2.739.446,05	92.096	31,42 %	28.932	62.710	-211.611,28	27	1,0	
2.732.426,88	89.802	30,92 %	27.769	61.613	-261.008,78	29	1,0	
2.723.993,33	97.727	33,52 %	32.762	64.417	-241.072,33	21	1,1	
2.706.250,60	97.114	32,11 %	31.187	65.397	-242.067,48	24	1,0	
2.699.222,98	109.541	32,63 %	35.744	73.175	-216.937,20	20	1,0	
2.654.062,95	88.735	30,71 %	27.253	61.077	-269.480,23	30	1,0	
2.649.431,28	90.907	31,14 %	28.307	62.158	-233.838,18	28	1,0	
2.648.183,70	92.019	33,20 %	30.551	60.960	-252.719,25	23	1,1	

FIGURE 5: OPTIMIZING THE INPUT VALUES. Here you see an optimization of the “Periods,” “DevUp,” “DevDown,” and “Coeff_Atr” inputs for the channel methods.

Bollinger Bands					Price Channel					Keltner Channel				
Market	Start Date	End Date	Net Profit	# Trades	Market	Start Date	End Date	Net Profit	# Trades	Market	Start Date	End Date	Net Profit	# Trades
@CL	08/01/2010 10:00:00	29/12/2023 23:00:00	224.490,00	11787	@CL	08/01/2010 15:00:00	29/12/2023 23:00:00	142.180,00	3547	@CL	08/01/2010 15:00:00	29/12/2023 23:00:00	54.460,00	4847
@HQ	08/01/2010 10:00:00	29/12/2023 23:00:00	668.094,00	10940	@HQ	08/01/2010 14:00:00	29/12/2023 23:00:00	402.221,40	3414	@HQ	08/01/2010 14:00:00	29/12/2023 23:00:00	503.920,20	4781
@RB	08/01/2010 10:00:00	29/12/2023 23:00:00	637.404,60	10830	@RB	08/01/2010 15:00:00	29/12/2023 23:00:00	363.661,20	3399	@RB	08/01/2010 15:00:00	29/12/2023 23:00:00	374.131,80	4884
@GC	08/01/2010 12:00:00	29/12/2023 23:00:00	95.780,00	11319	@GC	08/01/2010 15:00:00	29/12/2023 23:00:00	176.180,00	3477	@GC	08/01/2010 10:00:00	29/12/2023 23:00:00	138.090,00	4710
@PL	08/01/2010 13:00:00	29/12/2023 23:00:00	19.015,00	10612	@PL	08/01/2010 13:00:00	29/12/2023 23:00:00	145.215,00	3305	@PL	08/01/2010 13:00:00	29/12/2023 23:00:00	131.210,00	4538
@ES	08/01/2010 10:00:00	29/12/2023 23:00:00	(72.812,50)	11761	@ES	08/01/2010 15:00:00	29/12/2023 23:00:00	53.187,50	3529	@ES	08/01/2010 10:00:00	29/12/2023 23:00:00	(21.675,00)	4885
@NQ	08/01/2010 10:00:00	29/12/2023 23:00:00	243.405,00	12070	@NQ	08/01/2010 15:00:00	29/12/2023 23:00:00	160.845,00	3573	@NQ	08/01/2010 10:00:00	29/12/2023 23:00:00	49.790,00	5208
@S	11/01/2010 14:00:00	29/12/2023 20:20:00	114.200,00	8859	@S	11/01/2010 18:00:00	29/12/2023 20:20:00	143.350,00	2530	@S	11/01/2010 17:00:00	29/12/2023 20:20:00	75.837,50	3717
@KC	19/01/2010 12:15:00	29/12/2023 19:30:00	131.643,75	3995	@KC	19/01/2010 13:15:00	29/12/2023 19:30:00	174.375,00	1305	@KC	19/01/2010 12:15:00	29/12/2023 19:30:00	187.912,50	1815
@LH	02/02/2010 17:30:00	29/12/2023 20:05:00	115.030,00	1759	@LH	05/02/2010 17:30:00	29/12/2023 20:05:00	48.320,00	677	@LH	02/02/2010 17:30:00	29/12/2023 20:05:00	71.500,00	937
@LC	02/02/2010 20:05:00	29/12/2023 20:05:00	83.640,00	1938	@LC	02/02/2010 20:05:00	29/12/2023 20:05:00	20.480,00	674	@LC	02/02/2010 20:05:00	29/12/2023 20:05:00	26.410,00	949
@NG	08/01/2010 10:00:00	29/12/2023 23:00:00	191.510,00	12363	@NG	08/01/2010 14:00:00	29/12/2023 23:00:00	122.870,00	3819	@NG	08/01/2010 10:00:00	29/12/2023 23:00:00	85.200,00	5198
@OJ	27/01/2010 20:00:00	29/12/2023 20:00:00	124.740,00	2301	@OJ	28/01/2010 15:00:00	29/12/2023 20:00:00	98.835,00	759	@OJ	27/01/2010 20:00:00	29/12/2023 20:00:00	53.160,00	1203
@AD	08/01/2010 14:00:00	29/12/2023 23:00:00	31.370,00	10083	@AD	08/01/2010 15:00:00	29/12/2023 23:00:00	5.690,00	3285	@AD	08/01/2010 14:00:00	29/12/2023 23:00:00	(23.405,00)	4599
@BP	08/01/2010 10:00:00	29/12/2023 23:00:00	3.018,75	11461	@BP	08/01/2010 10:00:00	29/12/2023 23:00:00	7.856,25	3471	@BP	08/01/2010 10:00:00	29/12/2023 23:00:00	(23.275,00)	4850
@BTC	22/12/2017 10:00:00	29/12/2023 23:00:00	664.125,00	4292	@BTC	22/12/2017 15:00:00	29/12/2023 23:00:00	421.800,00	1384	@BTC	22/12/2017 10:00:00	29/12/2023 23:00:00	670.100,00	1834
@C	11/01/2010 14:00:00	29/12/2023 20:20:00	27.600,00	9321	@C	11/01/2010 14:00:00	29/12/2023 20:20:00	47.350,00	2642	@C	11/01/2010 14:00:00	29/12/2023 20:20:00	28.737,50	3819
@CC	20/01/2010 16:45:00	29/12/2023 19:30:00	30.880,00	3558	@CC	21/01/2010 15:45:00	29/12/2023 19:30:00	48.050,00	1157	@CC	20/01/2010 14:45:00	29/12/2023 19:30:00	28.210,00	1706
@HG	08/01/2010 10:00:00	29/12/2023 23:00:00	(53.800,00)	10859	@HG	08/01/2010 12:00:00	29/12/2023 23:00:00	7.100,00	3296	@HG	08/01/2010 10:00:00	29/12/2023 23:00:00	(60.425,00)	4676
@CT	11/01/2010 15:00:00	29/12/2023 20:20:00	109.795,00	8662	@CT	11/01/2010 18:00:00	29/12/2023 20:20:00	191.595,00	2300	@CT	11/01/2010 15:00:00	29/12/2023 20:20:00	70.080,00	3636
@EC	08/01/2010 10:00:00	29/12/2023 23:00:00	56.331,25	11373	@EC	08/01/2010 14:00:00	29/12/2023 23:00:00	19.356,25	3420	@EC	08/01/2010 13:00:00	29/12/2023 23:00:00	19.456,25	4754
@SB	19/01/2010 11:30:00	29/12/2023 19:00:00	19.320,00	3826	@SB	19/01/2010 12:30:00	29/12/2023 19:00:00	40.096,00	1284	@SB	19/01/2010 11:30:00	29/12/2023 19:00:00	11.110,40	1854
@SI	08/01/2010 12:00:00	29/12/2023 23:00:00	117.855,00	10850	@SI	08/01/2010 16:00:00	29/12/2023 23:00:00	250.990,00	3385	@SI	08/01/2010 15:00:00	29/12/2023 23:00:00	219.995,00	4608
@TY	08/01/2010 11:00:00	29/12/2023 23:00:00	(122.609,38)	11472	@TY	08/01/2010 15:00:00	29/12/2023 23:00:00	6.859,38	3532	@TY	08/01/2010 16:00:00	29/12/2023 23:00:00	(10.984,38)	4565
@US	08/01/2010 11:00:00	29/12/2023 23:00:00	(136.062,50)	11185	@US	08/01/2010 16:00:00	29/12/2023 23:00:00	18.093,75	3594	@US	08/01/2010 16:00:00	29/12/2023 23:00:00	(38.656,25)	4716
@W	11/01/2010 15:00:00	29/12/2023 20:20:00	61.012,50	8737	@W	11/01/2010 20:00:00	29/12/2023 20:20:00	49.150,00	2601	@W	11/01/2010 14:00:00	29/12/2023 20:20:00	33.712,50	3814
@Y	08/01/2010 16:00:00	29/12/2023 23:00:00	103.381,25	10109	@Y	11/01/2010 01:00:00	29/12/2023 23:00:00	117.406,25	3204	@Y	08/01/2010 16:00:00	29/12/2023 23:00:00	91.675,00	4521
@FC	02/02/2010 17:30:00	29/12/2023 20:05:00	223.575,00	1789	@FC	02/02/2010 20:05:00	29/12/2023 20:05:00	56.012,50	671	@FC	02/02/2010 17:30:00	29/12/2023 20:05:00	66.962,50	945

FIGURE 6: PORTFOLIO RESULTS USING OPTIMIZED INPUT VALUES. Here you seen the results for each futures market in the test portfolio using the optimized input values for the three types of price channel methods.

approach allows entry levels to be reached more frequently, thus increasing operations and net profit, even though it reduces the average trade value. See Figure 7 for a summary of results for each of the three channel methods based on optimized input values.

This analysis has two main purposes. The first is to verify that, despite adjustments to the standard input values, the outcomes remain as positive as in the initial test. The second is to assess how each indicator adapts to these changes. Overall, the metrics we've gathered aren't particularly relevant to our objectives; however, compiling a summary of the best-performing assets by each indicator, ranked by descending net profit, might offer insightful guidance for future developments.

The data shown in Figure 8, based on optimized input values (refer to Figure 5), clearly demonstrates that certain futures, especially the more volatile ones like bitcoin, energy futures, and coffee futures, consistently perform well across all three indicators. Specifically, bitcoin (@BTC), heating oil (@HO), and gasoline (@RB) futures stand out, reflecting their propensity for trend-following and their significant volatility.

FINAL THOUGHTS ON THE THREE PRICE CHANNEL METHODS FOR TREND-FOLLOWING STRATEGIES

To wrap up, the test results lead me to believe that these indicators can indeed serve as effective tools for building trading systems. However, it's clear that they don't all work equally well across different instruments. I recommend that you dive deeper into studying these three techniques applied to the markets discussed in this article, as they seem to respond more favorably to this strategy.

See you next time!

Andrea Unger is a full-time professional trader, president of The Unger Academy, and author of The Unger Method. He is a four-time World Trading Champion (2008, 2009, 2010, and 2012), an honorary member of SIAT (Italian Society of Technical Analysis, a branch of IFTA), and speaks throughout Europe, America, Australia, and Asia. He may be reached at Andrea@UngerAcademy.com. The Unger Academy provides services to traders, including individuals, to help them improve their approach to trading (more information can be found at <https://autc.pro/tasc>).

FURTHER READING

Unger, Andrea [2021]. *The Successful Trader's Guide To Money Management: Proven Strategies, Applications,*

Method	NetProfit	Average Trade	# of Trades	Max DD
Bollinger Band	\$3,711,931.72	\$15.59	238,111	-\$170,146.80
Price Channel	\$3,339,125.47	\$45.60	73,234	-\$234,644.62
Keltner Channel	\$2,813,240.52	\$27.43	102,569	-\$230,778.50

FIGURE 7: SUMMARY OF RESULTS USING OPTIMIZED INPUT VALUES.

Here you can compare the results of using each of the three channel methods using the standard input values.

Bollinger Bands		Price Channel		Keltner Channel	
@HO	\$668,094.00	@BTC	\$421,800.00	@BTC	\$670,100.00
@BTC	\$664,125.00	@HO	\$402,221.40	@HO	\$503,920.20
@RB	\$637,404.60	@RB	\$363,661.20	@RB	\$374,131.80
@NQ	\$243,405.00	@SI	\$250,990.00	@SI	\$219,995.00
@CL	\$224,490.00	@CT	\$191,595.00	@KC	\$187,912.50
@FC	\$223,575.00	@GC	\$176,180.00	@GC	\$138,090.00
@NG	\$191,510.00	@KC	\$174,375.00	@PL	\$131,210.00
@KC	\$131,643.75	@NQ	\$160,845.00	@JY	\$91,675.00
@OJ	\$124,740.00	@PL	\$145,215.00	@NG	\$85,200.00
@SI	\$117,855.00	@S	\$143,350.00	@S	\$75,837.50

FIGURE 8: TOP 10 FUTURES RANKED BY NET PROFIT. Here, results from the test using optimized input values for each of the three channel methods are sorted by net profit. The more volatile and trending futures markets performed the best across all three channel types.

And Management Techniques, Wiley Trading.

—— [2021]. *The Unger Method: The Winning Strategy Of The 4-Time World Trading Champion*, The Boss Books.

—— [2024]. “Developing A Trend-Following Strategy For Futures Based On Price Channels,” *Technical Analysis of STOCKS & COMMODITIES*, Volume 42: June.

‡TradeStation, ‡MultiCharts

‡See Editorial Resource Index

Find similar articles online at [Traders.com](https://www.Traders.com)

It's clear that they don't all work equally well across different instruments.

Explore Your Options

GOT A QUESTION ABOUT OPTIONS?

Jay Kaeppel has over three decades of experience in the options markets. He was a head trader for a CTA firm, an options trading software developer, and was a portfolio manager for an investment management firm. He is presently Senior Research Analyst for Sentimentrader.com. He is the author of several books, including *The Four Biggest Mistakes In Option Trading*; *The Option Trader's Guide To Probability, Volatility, And Timing*; and *Seasonal Stock Market Trends*. Send your questions or topic suggestions to Jay Kaeppel at jay@sentimentrader.com. Selected questions will appear in a future issue of S&C.



Jay Kaeppel

SHORT-TERM CREDIT SPREADS—SO MANY CHOICES

I am interested in selling short-term credit spreads to generate income. But there are so many potential choices regarding which spread to choose. Are there any guidelines for selecting the best spread?

There are potential guidelines that a trader can apply, but there is no such thing as “the best spread.” In most cases, it is best to consider a couple of potential trades and then compare the key factors. The three key factors to consider are:

- How long until expiration
- Potential return
- Potential return versus the potential risk

Each trader must decide which trade is “the best” in each given circumstance. While the choice is subjective, it is essential to understand your goals in terms of reward and your ability to withstand risks.

The best way to illustrate is with an example that compares the tradeoffs between two potential trades.

SPDR S&P 500 ETF TRUST (SPY)

Let's assume a trader believes SPY will not decline much over the next several weeks. To exploit this opinion, the trader can sell an out-of-the-money put spread that expires in 14 days. Let's consider two potential

spreads, with SPY trading at \$511.31 a share.

The first spread involves:

- Selling the SPY May17 2024 506

put @ \$2.33

- Buying the SPY May17 2024 500 put @ \$1.23

The second spread involves going

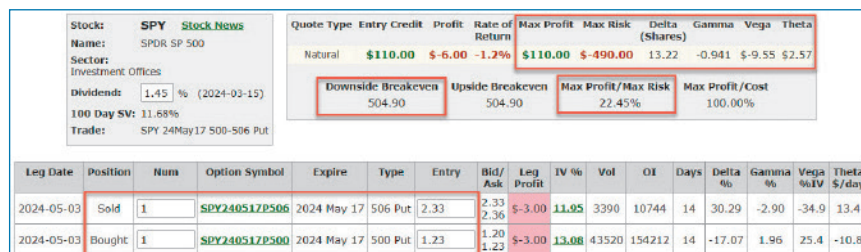


FIGURE 1: TRADE DETAILS, OUT-OF-THE-MONEY PUT CREDIT SPREAD. Here you see the trade particulars for the example 506–500 put credit spread position, trading a 1-lot.



FIGURE 2: RISK CURVES, OUT-OF-THE-MONEY PUT CREDIT SPREAD. Here you see the risk curves for the example 506–500 put credit spread trade from Figure 1.

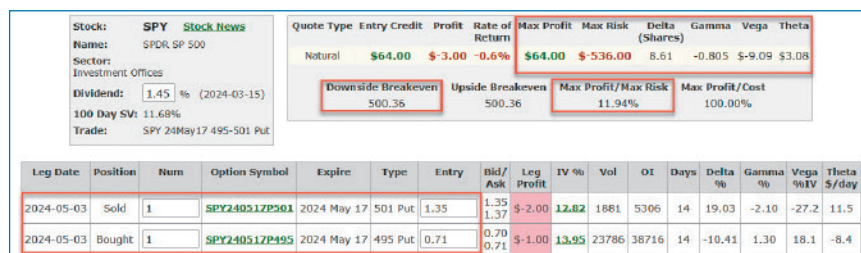


FIGURE 3: TRADE DETAILS, FURTHER OUT-OF-THE-MONEY PUT CREDIT SPREAD. Here you see the trade particulars for the example 501–495 put credit spread position, trading a 1-lot.

Explore Your Options



FIGURE 4: RISK CURVES, FURTHER OUT-OF-THE-MONEY PUT CREDIT SPREAD. Here you see the risk curves for the example 501–495 put credit spread trade from Figure 3.

Much of the decision will be based on one's confidence in their belief that their chosen trade will expire with the stock price above the option trade's breakeven price.

further out-of-the-money and:

- Selling the SPY May17 2024 501 put @ \$1.35
- Buying the SPY May17 2024 495 put @ \$0.71

Figure 1 displays the particulars for the first spread (506–500 put credit spread) and Figure 2 displays the risk curves for the same spread, trading a 1-lot.

Figure 3 displays the particulars for the second spread (501–495 put credit spread) and Figure 4 displays the risk curves for the same spread, trading a 1-lot.

Now let's consider the tradeoffs between the two positions. The values for the key variables appear in Figure 5.

The key tradeoffs:

- Both trades have only 14 calendar days left until expiration. This means that the greek values of vega and theta are less critical than they might be if there were more time until expiration. *Vega* indicates the expected \$ change in the position's value if implied volatility rises one point. *Theta* indicates the expected \$ change in the position's value based solely on the passage of one day. These two factors only apply to the amount of time premium built into the options. In 17 days, the options will all expire, and there will be no time premium left in their price (i.e., they will either expire worthless if they are out-of-the-money at expiration or will expire worthless exactly their intrinsic value if they expire in-the-money.) The bottom line is that whatever influence time and volatility have on these options, that influence will vanish by expiration.
- Because the 506–501 spread has a higher delta and a larger gamma, price changes for SPY will impact the value of this spread more than the 501–495. This makes sense since the 506 short strike is closer to the current price of SPY than the 501 short strike.
- The breakeven price for the

Measure	506–500 Spread	501–495 Spread
Days left until expiration	14	14
Maximum \$ profit potential	\$110	\$64
Maximum \$ risk	–\$490	–\$536
Maximum % profit potential	22.5%	11.94%
Breakeven price at expiration	\$504.90	\$500.36
Breakeven distance from stock price	–1.3%	–2.1%
Probability ending < breakeven	33.2%	22.9%
Delta	13.22	8.61
Gamma	–0.941	–0.805
Vega	–\$9.55	–\$9.09
Theta	\$2.57	\$3.08

FIGURE 5: COMPARING KEY VARIABLES FOR POTENTIAL POSITIONS. You can compare some of the tradeoffs between two positions under consideration, which in this case is the 506–500 put credit spread (out-of-the-money) versus the 501–495 put credit spread (further out-of-the-money). Among other considerations, the 506–500 spread has a profit potential of 22.5% in 14 days versus 11.9% for the 501–495 spread, but the 501–495 spread has a higher probability of success by the time the option expires.

506–501 spread at expiration is \$504.90. This means the position can break even if SPY falls no more than –1.3%. Based on current volatility, the probability of SPY closing above \$504.90 at expiration is 66.8%.

- The breakeven price for the 501–495 spread at expiration is \$500.36. This means the position can break even if SPY falls no more than –2.1%. Based on current volatility, the probability of SPY closing above \$500.36 at expiration is 77.1%.

The bottom line is that the 501–495 spread has a higher probability of profit. The tradeoff is that the 506–500 spread can generate a profit of 22.5% in 14 days versus 11.9% for the 501–495 spread.

Continued on page 33



An Overview For Traders

Writing Covered Calls

Part 2: Opportunities For Option Sellers

Last time in part 1, we looked at using the option strategy of writing covered calls, including what to consider when you go to write (sell) a covered call. This time, we look at some ways to implement and structure your covered call writes, and consider uses for this popular instrument that you may not have thought of.

by John Devcic



Why would a trader consider selling a call option on a stock? There are several attractive reasons. First of all, the seller receives cash for the sale, providing income. The trader can use options to essentially boost

their stock dividend. In addition, a trader could choose to sell calls as part of a plan to potentially sell their stock shares at a target price. There are many ways to use options.

Earlier, in part 1 of this two-part article series, I looked at selling covered calls and how and when this strategy is typically used. I discussed how the covered call seller could benefit in scenarios where the underlying stock

trades flat or falls. I also discussed choosing a strike price for the option, and protecting your option position by rolling it.

Here in part 2, I'll discuss some of the benefits of selling covered calls, also known as the *covered call write* (CCW for short). "Writing" a call option is synonymous with "selling" a call option.

A CCW is simply selling a call option on at least 100 shares of a stock that you own in your brokerage account. This makes it lower-risk type of option to sell compared to some other types of options, since the trade is backed by your long stock and so is already "covered" by that asset, rather than having to put up the capital later to cover the obligation.

For a quick review, remember that a *call option* gives the buyer the right but not the obligation to buy the underlying stock at the option's strike price. Options have two important components: price and time. (See my earlier article series, "An Introduction To Options," for a discussion of the components of option contracts.)

To trade a CCW, you normally won't need brokerage approval to trade options beyond tier 1.

Now let's dive into some more discussion about how you could go about writing a covered call and how you could benefit from using such a strategy.

DELTA: GAUGING YOUR CHANCES OF KEEPING YOUR UNDERLYING STOCK AND PREMIUM

One of the greek variables commonly used in options analysis is the *delta*. It's one of the greeks most often cited and used in option trading.

In the case of writing covered calls—where we are selling an option on our long stock—delta can be used to gauge our chances of keeping our underlying stock (as opposed to having it called away from us by the call buyer if the call buyer chooses to exercise the option), as well as our chances of keeping all of our premium (as opposed to choosing to close the call early by paying a premium to buy it back).

As an example, we can sell a strike price at a delta of 0.50. This means there is a 50/50 chance the stock will close above the strike price. The further out of the money you choose to sell your call, the lower the delta, the lower the premium, and the higher the chance you will keep the premium as well as the shares of stock. Selling a call option with a delta of 0.30 means we have a roughly 70% chance of keeping our shares.

Remember, you are not obligated to hold the call you wrote till expiration. You can choose to buy back the call you wrote at any time. (There are several reasons you may choose to do that—for example, to close out a winning trade, to roll your trade into a new contract expiration, or to ensure you get to keep your stock; see part 1 of this article in the June 2024 issue for a discussion of some of these types of cases and scenarios.) When you buy back the call, you may still be able to keep some or most of your premium (in cases where you are buying back the call at a lower premium) or you may actually incur a debt to buy back the call (in cases where you buy back the call at a higher premium).

On the other hand, if the sold call option expires worthless, you would keep the entire premium that you received when you sold the call (minus any transaction fees or commissions that may be charged by your brokerage whenever an option is bought or sold).

Whenever I talk about delta, I have to make it a point to underscore that *delta changes as the underlying stock price changes*. This means that your 0.30 delta can quickly change to a 0.40 delta if the underlying stock price moves higher.

You could have a delta of 0.10 with a 90% chance the stock will remain in your portfolio—leading you to feel confident in your odds of being able to keep your

shares—only to have the stock's price move so rapidly, especially if this happens near option expiration, that the situation changes very quickly. This sounds far-fetched until you have experienced it first-hand.

Many covered call writers choose a delta they feel comfortable with, and they like to sell calls at that level. Trial and error is the only way for you to get comfortable using delta.

USING OPTIONS WITH STOCK DIVIDENDS

Many option traders will use covered call writing when they hold dividend-paying stocks. If you own a stock that pays a dividend, you can sell a CC for equal to the dividend you will receive. Sometimes, depending on the stock, you can even double the amount of the dividend you would receive, through receipt of the premium plus receipt of the dividend. You do this by either collecting premium monthly until the dividend is paid or by buying an option that expires around the same time that the dividend will be paid. Let's say the dividend is being paid three months from now and it will be a \$30 dividend for 100 shares. You could write a covered call paying you \$10 a month for three months, or you could simply buy a CC three months out that pays about \$30. In that way, you will have essentially doubled your dividend.

However, this approach comes with a warning, especially when trying to significantly increase your dividend: Make sure you are mindful of the ex-dividend date. You do not want to be called out early because you have sold a call that expires after the ex-dividend date and the price is above the current strike price. Many times, CC writers will forget about the ex-dividend date and find that the call buyer has exercised the call prior to the ex-dividend date, and now the CC writer will not receive his stock dividend, although the CC writer does still get to keep the premium he was paid.

USING COVERED CALLS TO CLIMB THE LADDER TO EVEN MORE PREMIUMS

When traders own multiple lots of a security, they can use a strategy known as *laddering* their covered calls.

A CCW is simply selling (writing) a call option on at least 100 shares of a stock that you already own in your brokerage account.



Covered call laddering is as straightforward as regular covered call writing.

Laddering means selling more than one covered call. If you own more than one round lot, that is, 100 shares of stock in a company, in multiples of 100 (200, 300, 400 shares, etc.), you could sell one covered call for each 100 shares of long stock. For example, if you had 350 shares of XYZ stock all at the same cost basis, you could sell up to three CCs.

So how can we implement the CC ladder for our XYZ shares?

Say that stock XYZ is selling for 51 and our cost basis is 50. We decide to sell one CC two weeks out with a strike of 51. This would be an at-the-money call or ATM call. Next, we go out and sell a CC for 30 days out at a strike of 53; this would be an out-of-the-money (OTM) call. Next, we decide we want to write a covered call on the remaining 100 shares we have in our portfolio. We might choose to write a 45-day or maybe a 60-day call with a strike price of 55. The result is we collected three separate premiums, giving us cash deposited into our account.

What if XYZ stock then goes nowhere or trades down? If we hold our calls to expiration, that will result in us keeping all of the premium. Note that once the first CC expires in two weeks (based on the current example), we are free to write another call at a different expiration date and different strike. This can be done over and over again to collect premium serially.

Laddering allows us time and gives us a bit of protection in the case where XYZ stock suddenly and rapidly appreciates in price.

I want to point out that at no point do you *have* to write three CCs on your three lots of stock; you could choose to write one, two, or none for that matter. Also, you could choose to write three calls for the *same* strike prices and expiration dates, rather than staggering them.

The CC ladder offers a good way to capture premium as well as price appreciation.

SOME CAVEATS AND TIPS

When embarking on the CCW strategy, go into it prepared. Make sure you have a good overall picture of what the CCW strategy entails and how to approach it. You should understand that at some point in time when using the CCW strategy, you could lose your shares of underlying stock, and there are times when you will need to *buy back* the call you sold—even if it's at a debit—if you want to keep your underlying stock shares.

Also, you should generally choose stocks that you want to own and are comfortable owning. There is no sense in

If you own a stock that pays a dividend, you can sell a CC for equal to the dividend you will receive.



buying a stock you do not want to own, and there is no sense in buying a stock only for option premium.

Understand that while high premiums may be attractive, with that usually comes a very volatile stock that could quickly turn into a loser in your portfolio. Sure, you could buy a put as protection on it, and while doing so would help, it is much easier and it is far less aggravation to own stocks you actually want to have in your portfolio. Thus, it's better to choose CCWs not just based on the premium but also on whether you like the underlying stock.

Here are some important tips to keep in mind when venturing into covered call writing:

- First (and there is a good reason I am putting this tip first in this list), make sure you want to own the underlying stock.
- Second, be prepared to lose your stock regardless of the delta you chose.
- Be aware of potential early exercise by the holder of the option you wrote, especially around ex-dividend dates.
- Be mindful of important events and news potentially affecting your stock such as earnings and ex-dividend dates.
- The more premium you seek, the less likely it is that you will be able to keep your stock.
- Choose strike prices and expiration dates carefully.
- If you are writing calls at a strike price above your basis, you will always be a winner even when your stock gets called away.
- Try to avoid selling calls on down days. Doing so could lead you to write a call at a closer strike price that could get touched if the market or that stock moves rapidly the next day.
- The longer out you go when writing a call, the more premium you will usually receive and the less likely a sudden change in a stock price to the upside will affect you. While you can certainly write calls on weekly options or on options that expire in the near future, consider selling calls that are 30 to 45 days

out, especially when you are just starting out.

- Finally, close out a winner early. Don't risk getting your shares called away because you have three days left until expiration and you're holding on, waiting for the option to expire worthless in order to keep your entire premium.

On this point, here is a good rule of thumb that many traders follow, especially in fast-moving stocks: If you can collect anywhere from 65% of the premium you originally were given, take it. This could happen as quickly as the next day or within the week that you wrote the CC. When you can, sell the call and take a profit. I usually close when I hit 70% of the premium after I write a call. You can do this easily by placing a sell order on the option you just wrote that equals a 70% capture of the premium.

CONCLUDING THOUGHTS

You may hear that the strategy of covered call writing is an easy strategy to execute and isn't very exciting to do. However, when you have done enough covered call writing, you will start to see the benefit of collecting that premium right away. You will also appreciate being able

to buy back your sold call for a nice profit while still keeping your stock in some scenarios. Covered call writing is a powerful tool for potentially getting a healthy return from your money, all while your long stock (hopefully) appreciates over time.

John Devcic is a trader, market historian, and freelance writer. He may be reached at jdevcic@gmail.com.

FURTHER READING

- Devcic, John [2024]. "Writing Covered Calls, Part 1: Examining Your Choices," *Technical Analysis of STOCKS & COMMODITIES*, Volume 42: June.
- [2023]. "An Introduction To Options, Part 1: Form And Function," *Technical Analysis of STOCKS & COMMODITIES*, Volume 41: August.
- [2023]. "An Introduction To Options, Part 2: The Greek Variables," *Technical Analysis of STOCKS & COMMODITIES*, Volume 41: September.
- [2023]. "An Introduction To Options, Part 3: Putting Options To Work For You," *Technical Analysis of STOCKS & COMMODITIES*, Volume 41: October.

Find similar articles online at [Traders.com](https://www.Traders.com)

KAEPPEL

Continued from page 29

Figure 6 displays the particulars for the two trades and Figure 7 displays the risk curves for both trades at expiration.

The critical decision for a trader is whether to emphasize probability of profit or maximum reward to risk. As I said, there is no "best trade." Much of this decision will be based on one's confidence in their belief that their chosen trade will expire with the stock price above the option trade's breakeven price.

OptionsAnalysis.com

See Editorial Resource Index

Left Trade												
Leg Date	Position	Num	Option Symbol	Expire	Strike	Type	Entry	Bid/Ask	IV %	Vol	OI	Days
2024-05-03	Sold	1	SPY240517P506	2024 May 17	506.000	Put	2.33	2.33/2.36	12.0	3390	10744	14
2024-05-03	Bought	1	SPY240517P500	2024 May 17	500.000	Put	1.23	1.2/1.23	13.1	43520	154212	14
Right Trade												
Leg Date	Position	Num	Option Symbol	Expire	Strike	Type	Entry	Bid/Ask	IV %	Vol	OI	Days
2024-05-03	Sold	1	SPY240517P501	2024 May 17	501.000	Put	1.35	1.35/1.37	12.8	1881	5306	14
2024-05-03	Bought	1	SPY240517P495	2024 May 17	495.000	Put	0.71	0.7/0.71	14.0	23786	38716	14

FIGURE 6: TRADE DETAILS, COMPARING TWO PUT CREDIT SPREAD POSITIONS. This shows the trade particulars for both potential trades, the 506–500 put credit spread and the 501–495 put credit spread.



FIGURE 7: RISK CURVES, COMPARING TWO POTENTIAL PUT CREDIT SPREAD POSITIONS. The risk curves are shown here for the two trades depicted in Figure 6. Risk curves show the expected dollar gain or loss based on the price of the underlying stock as of four dates leading up to option expiration. The option expiration date is shown here as a black line.

Find similar articles online at [Traders.com](https://www.Traders.com)



A Technique For Trend Charting

Smoothed Heikin-Ashi: Advancing A Classic Trading Tool For Crypto Trading

“Heikin-ashi” translates to “average bar” in Japanese. The smoothed heikin-ashi is an approach to charting that can lead to better outcomes for your cryptocurrency trading. Find out how.

by Azeez Mustapha

If you’re a trader, you likely know about the heikin-ashi charting technique. It’s a mechanism for understanding market direction. But are you aware there’s an even better version? Let’s explore this advancement.

First, let’s consider the heikin-ashi charting technique. Compared to traditional candlestick charts, the heikin-ashi type of candlestick chart smooths price action by taking an *average* of the open-high-low-close (OHLC) prices rather than using actual price values. This heikin-

ashi formula for constructing the candlesticks produces a smoother chart than you see with traditional candlestick charts. This simplifies trend analysis. In traditional candlestick charts, upward or downward movements can be noisy, leading to false signals. Since the heikin-ashi formula to plot the candles contains a smoothed version of prices, it makes the market direction clearer to see.

The *smoothed* heikin-ashi formula is a significant upgrade from the original heikin-ashi technique (which is already smoother than traditional candlestick charts). Unlike its predecessor, the original heikin-ashi formula, which is used in candlestick charting, the smoothed heikin-ashi can be overlaid on traditional price bar charts. This advancement offers clear views of market movements. It effectively filters market noise during volatility. This stands in contrast to classic heikin-ashi, which can produce false signals in turbulent markets.

The formula for the *smoothed heikin-ashi* uses a simple

moving average (SMA) or exponential moving average (EMA) on each of the open/high/low/close prices before calculating the heikin-ashi values.

Integrating smoothed heikin-ashi into your trading and market analysis is straightforward if your platform offers it. I use TradingView, and I simply go to the indicators section, find “smooth heikin-ashi,” and then adjust settings if needed. Default settings (usually 10 and 10) are suitable for beginners. Other settings that may be useful tend to be the following:

- 1. For scalping or short-term trading:** Use 5 and 5 settings. This is ideal for capturing quick profits from short-term price movements.
- 2. For swing trading or long-term analysis:** Choose 20 and 20 settings. These settings offer a broader perspective on market trends, suitable for long-term strategies.

For the purposes of this article, we’ll stick with the default settings of 10 and 10.

With heikin-ashi candles, green stands for an uptrend and red stands for a downtrend. Understanding these colors helps identify potential trend change. For example, a switch from green to red indicates a possible upward-to-downward trend shift, and vice versa. Candle size also matters: Larger candles show strong momentum, while smaller ones hint at potential reversals.

IDENTIFYING TREND REVERSALS

Recognizing trend reversals in smoothed heikin-ashi charts is crucial. A transition from red to green candles signifies a shift from a downtrend to an uptrend. However, these color changes aren’t direct buy/sell signals. Relying solely on them can lead to late entries and missed opportunities.

In the scenario seen in Figure 1, a strong downtrend is evident, with large red heikin-ashi candles. Eventually, the candles decrease in size before turning green, indicating a trend reversal to an uptrend. However, this change happens after a significant upward movement,



FIGURE 1: SMOOTHED HEIKIN-ASHI CHART, IDENTIFYING TREND REVERSALS. A transition from red to green candles signifies a shift from a downtrend to an uptrend.

making it a late signal for entering a buy position.

So, what’s the better approach to leveraging the smoothed heikin-ashi chart? Here is an outline for a more effective strategy:

- 1. Identify a strong trend.** Begin by identifying a robust existing trend. In the example in Figure 1, the price demonstrates a clear upward trajectory, corroborated by large green heikin-ashi candles.
- 2. Wait for trend change signals.** Once the prevailing trend is established, patiently await signals indicating a potential trend reversal. Monitor the heikin-ashi candles for signs of diminishing size, signaling a weakening trend. Eventually, the candles will transition to red, indicating a shift towards a downtrend.
- 3. Exercise patience for entry.** While the trend change is evident, exercise caution and refrain from immediately entering a buy position. Instead, wait for a pullback in the price towards the indicator before considering your entry. Hence, the indicator is used as support and resistance.

UTILIZING SMOOTHED HEIKIN-ASHI AS DYNAMIC SUPPORT & RESISTANCE

The next step is waiting for confirmation signals to ensure the sustainability of the identified trend.

After identifying a potential trend reversal and confirming the shift to an uptrend, it’s essential to await further confirmation signals before trading. Specifically, we look for price action to affirm the trend’s continuation. Upon analysis, we note a significant event in this example: a green candle pulls back on the red heikin-ashi candles. This is followed by a large red (down close) engulf-

ing candle to reveal a resumption of the new trend. This candle pattern further bolsters our confidence in the downward trajectory, providing additional confirmation that the price may indeed continue its ascent.

With confirmation signals in place, it's now opportune to execute a sell position.



FIGURE 2: SMOOTHED HEIKIN-ASHI CHART, SWING TRADE. This example trade in HBAR/USD was entered in early May 2023 and closed in early June 2023, thus it lasted about a month. Confirmation from price action bolsters confidence in the trend direction suggested by the heikin-hashi chart.

RISK MANAGEMENT

To manage risk effectively, consider placing a stop-loss order at the nearest swing high (for selling positions) and swing low (for buying positions).

For profit-taking, aim for a target that is two to three times the distance of the stop-loss. This ensures a favorable risk-to-reward ratio, aligning with sound trading principles.

The example provided in Figure 2 was a trade taken in early May 2023 and closed in early June 2023.

Trade signal (swing trade)

Instrument: HBAR/USD

My opinion: Limit

Entry price: \$0.05888

Stop: \$0.06552

Target: \$0.04523

Suggested risk: 1%

Risk-to-reward ratio: 1:2

By employing smoothed heikin-ashi in this manner, traders can secure more favorable entry signals. This approach leverages confirmation signals derived from price action, enhancing the precision and efficacy of trading decisions.

UTILIZING SMOOTHED HEIKIN-ASHI AS AN EXIT INDICATOR

Smoothed heikin-ashi isn't just for entries; it's valuable for exits too, especially with trailing stop-loss strategies. By gauging trend strength, it helps prolong winning trades and thus helps maximize profits. Instead of using fixed targets, traders use trailing stop-losses. Once a buy position is opened, traders let the trade run until the indicator switches color, signaling a likely trend shift

and prompting profit-taking.

This approach helps market participants to maximize profit potential and abstain from premature exits that could result in missed opportunities.

CONCLUSION: TREND STRENGTH, TRAILING STOPS

Incorporating smoothed heikin-ashi as part of an exit strategy offers traders a dynamic approach to managing trades and maximizing profits. By leveraging its ability to assess trend strength and employing a trailing stop-loss strategy, traders can optimize their trading outcomes and achieve greater success in the dynamic realm of the financial markets.

Azeez Mustapha is an analyst at Instaforex Companies Group and a blogger at Advfn.com, and as well as a freelance author for various trading publications. He is a trading signals provider at some websites. He can be reached via email at azeez.mustapha@analytics.instaforex.com.

✚TradingView

✚See Editorial Resource Index [Find similar articles online at Traders.com](#)

Unlike its predecessor—the original heikin-ashi formula that is used in candlestick charting—the *smoothed heikin-ashi* can be overlaid on traditional price bar charts.

ALGORITHMIC TRADING

Have a question about system or algo trading? Kevin J. Davey has over 30 years of system trading experience. Davey is a full-time trader, and also teaches and consults via his Strategy Factory online workshop (<https://kjtradingsystems.com>), which was the winner of the 2024 Readers' Choice Award in this magazine for the category of "Trading Schools." Davey is also the author of five books on trading. Send your questions or topic suggestions to Kevin Davey at kdavey@kjtradingsystems.com. Selected questions will appear in a future issue of S&C.



Kevin J. Davey

REALISTIC EXPECTATIONS

One thing that scares me about algo trading is the fact that I apparently can't just build 30 diverse algos and go enjoy my life in peace and let them run for the next 20 years and make money year to year. Why would I have to constantly keep building algos? What is the point of algo trading if everything doesn't just run itself?

You've expressed some serious misconceptions that many new traders have about algo trading, and what it can and cannot do. The misconceptions I see in what you've said are that the trader could:

1. Build 30 diverse algos, go enjoy my life in peace
2. Let them run for the next 20 years
3. Make money year to year

If these are the expectations that someone has about algo trading, my initial reaction is that algo trading is not for them. But let's take a look at each of these points to understand what may or may not be realistic.

1. Build 30 diverse algos, go enjoy my life in peace

Yes, it is definitely possible to build 30 diverse algos. These could consist of one strategy traded in 30 different futures markets, 30 different strategies traded in one market, or anything in between. The key is that the 30 algos should have uncorrelated performance. Diversification is one

important key to algo trading success. So that part of your statement is definitely possible.

But I do take issue with the "go enjoy my life in peace" part. Trading 30 algos with real money takes time and effort. It is not as simple as running the strategies on charts and checking them once a month. Rollovers, disconnects, mismatches and more are part and parcel of an algo trading business. Algo trading requires time and effort to be sustainable. I've been trading for over 30 years, and I've yet to start living my trading life in peace!

Very few businesses, if any, can survive even five years if they don't constantly innovate, create and improve.

2. Let them run for the next 20 years

Constant improvement of your trading is necessary to thrive and survive. In this sense, algo trading is just like running a business. Very few businesses, if any, can survive even five years if they don't constantly innovate, create and improve. Competition is always biting at your heels. Great companies have dedicated research and development groups to create new products. Your algo trading business needs this too.

I cannot think of any business that

has been on autopilot for 20 years and still thrives. Similarly, most algos from 20 years ago (or even 10 years ago) have stopped performing at a high level. Edges disappear as other traders discover them or as markets change. It is not realistic to expect any algo to perform well for 20 years, although I am sure there are some out there that do.

3. Make money year to year

Of all the assumptions you mentioned about algo trading, this might be the most concerning: unrealistic expectations regarding performance. Many new algo traders mistakenly assume profits will be steady, consistent, and predictable. That is a serious fallacy.

The fact is, trading returns are "lumpy." Some years all the profit will come in one month while the other 11 months will be breakeven or will lose money. Some years, the profits never arrive. And still other years will have month after month of steady profits. You just never know how it will go, except you can expect your returns to be volatile.

The late trading legend Jim Simons of Renaissance Technologies experienced serious drawdowns (of over 50%) in his career, and his fund had losing years. When even the greatest traders around have down periods, what hope do regular algo traders have of consistent year-to-

Continued on page 41

CHARTING THE MARKETS

Stella Osoba, CMT, Esq., is an attorney, trader, and financial writer in New York, NY, and is also the Senior Editor, Trading and Investing, for Investopedia.com. Her work in financial litigation involving regulatory bodies and large multinational corporations led to an interest in the financial markets, then technical analysis and the psychological aspects of market behavior. She earned a CMT charter in 2013 and was a director-at-large on the board of the CMT Association for four years. This column will focus on recognizing and applying technical chart patterns to trading with flexibility and astuteness for better decision-making in trading. She can be reached at stellaosoba@gmail.com.



Stella Osoba

DECONSTRUCTING THE HINDENBURG OMEN

With the so-called “Hindenburg omen” bearish indicator recently in the financial news, it is perhaps time to delve deeper into this more obscure technical indicator.

The Hindenburg omen indicator was proposed by James Miekka and named after the infamous Hindenburg disaster of 1937. Its usefulness is debatable, but it aims to foretell potential stock market crashes. There are four criteria for the signal to be triggered:

1. The number of new highs and new lows on the NYSE must both be greater than a predetermined threshold amount.
2. The number of 52-week new highs cannot be more than the number of 52-week new lows.
3. The stock market is in an uptrend.
4. The McClellan oscillator is below zero or negative.

The indicator seeks to highlight periods when markets are still in uptrends but the number of stocks making new highs matches the number of stocks making new lows.

The indicator seeks to highlight periods when markets are still in uptrends but the number of stocks making new highs matches the number of stocks making new lows. When uptrends are healthy, stocks making new highs are expected to outnumber stocks making new lows. A signal of market indecision is when the numbers of new highs and new lows are about the same; buyers and sellers are causing the market to expand in both directions at once. This market indecision is said to

point to the potential likelihood that the uptrend is unsustainable.

On May 22, 2024 the Hindenburg omen was all over the news with scary headlines talking of flashing red lights pointing to a stock market crash. But it is always wise to contemplate emotional triggers with equanimity. Look under the hood to inspect the construction of the indicator being used to add more perspective to what we are being told. Financial news journalists are not necessarily traders; their job is



FIGURE 1: HINDENBURG OMEN INDICATOR. A daily chart of the S&P 500 index is shown with the Hindenburg omen indicator in the lower panel. The scale for the indicator ranges from zero to 3. If the top of the scale at the “3” level is touched, a signal occurs if and only if the other prescribed conditions for the indicator are also met.

to report financial news. We should not allow decisions that we should be making to be made by others. Our job is to understand how this ominous-sounding signal works, what its component parts are, and how it has worked in the past. That should help put things in better perspective.

The Hindenburg omen is said to have turned positive before the 1987 and 2008 market crashes, but it has still only been correct about 25% of the time or less. It is said to have been more likely to be correct before significant market crashes but often it will flash incorrect signals before other market declines. One should therefore be cautious before heeding its signal to sell and to flee the market.

Figure 1 is a daily chart of the S&P 500 index with the Hindenburg omen indicator depicted in the panel below the daily price chart. If you look at the panel depicting the omen you will see that 3 is the highest number seen. Each time the signal surges to touch 3, a Hindenburg omen signal may be triggered depending on whether the other factors are also met. So, for instance, the first time “3” was touched this year was on February 1, 2024, but the signal was not triggered because the McClellan oscillator was above zero (see Figure 2).

The next time 3 is hit by the Hindenburg omen is on May 22, 2024, as seen in Figure 2. This time, the

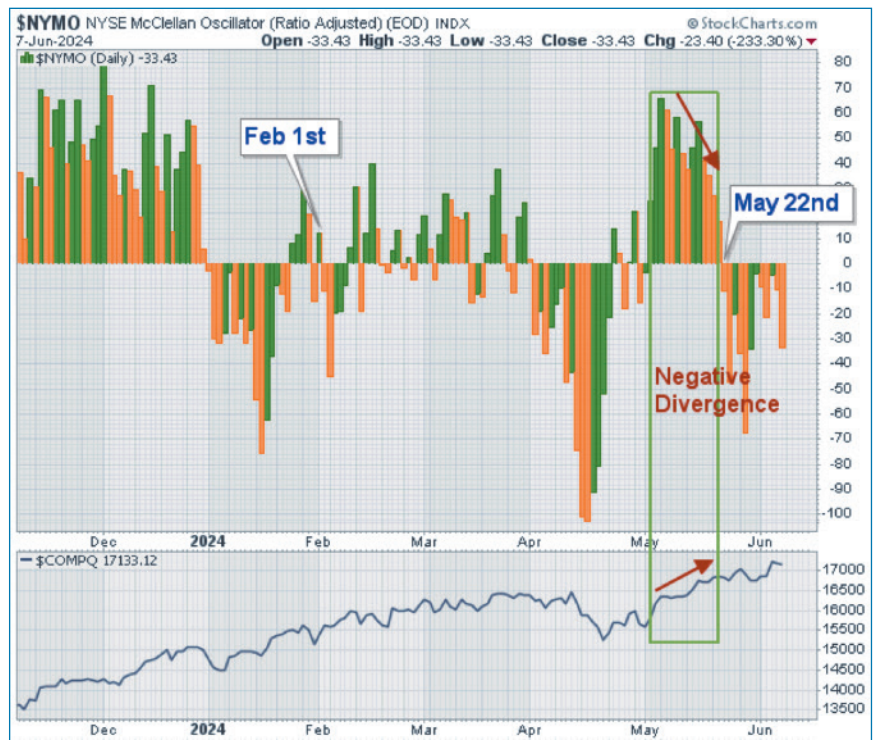


FIGURE 2: HINDENBURG OMEN INDICATOR SIGNAL. On February 1, 2024, the top of the indicator’s scale (“3”) is touched but a signal is not triggered because all other conditions were not met (the McClellan oscillator was above zero here). On May 22, 2024, the indicator again touches the top of the scale at “3” and this time the signal is triggered because other conditions were met (this time, the McClellan oscillator is below zero).

signal is triggered because the McClellan oscillator is now below zero. But the signal being triggered without additional confirmation is barely significant. As with all indicators, there should be more. There has to be confirmation, which should always come from looking at price action.

Also, one of the more important things to remember when using this indicator is to pay attention to clusters. One hit of the signal is not necessarily

suggestive of anything in particular, which is why the recent histrionics by the financial news media was unhelpful. If, in the 30 days from May 22, the signal is hit repetitively, that is, the top of the panel is touched several times forming a cluster, then it might be time to pay attention and look to price for signs of a market reversal.

Find similar articles online at [Traders.com](https://www.Traders.com)

GARNER

Continued from page 15

margin requirement and a smaller contract size makes speculating more comfortable. Further, a trader can fully fund their trading account to eliminate the leverage. Those trading a full-sized contract would need a hefty \$112,500, too much for most to

allocate to a single industrial metal, but \$11,250 is doable for many. As a friendly reminder, leverage can work for you if things are going well but against you when they aren’t. Using less leverage increases the odds of success because it gives traders more room for error before either panicking or triggering a margin call.

As a friendly reminder, leverage can work for you if things are going well but against you when they aren’t.

Find similar articles online at [Traders.com](https://www.Traders.com)

GOT A QUESTION ABOUT USING TRADING STRATEGIES?

Dave Mabe has 25 years of experience in trading strategy development. With a background as a computer engineer and chief technology officer for Trade-Ideas, he is interested in the design of innovative algorithms for rules-based trading systems as well as the intersection of artificial intelligence and finance. He launched DaveMabe.com to help other traders learn how they can improve their trading performance and consistency in results. Through his website he offers a road map for trading strategy development and offers one-on-one coaching. Send your questions or topic suggestions to Dave Mabe at dave@davemabe.com. Selected questions will appear in a future issue of S&C.



Dave Mabe

THE HIDDEN COST OF TAKING PARTIAL PROFITS

What's the best way to take partial profits in a winning trade?

Exiting part of a trade at some level (also known as “taking a partial”) is tempting because on the surface it seems like a great compromise. When you find yourself in a winning trade, most traders are reminded of trades they’ve made in the past that could have been profitable had they exited earlier. It is painful to watch a profitable trade turn into a loser.

A common response to this painful memory is to make a compromise and exit part of the position and leave the rest to play out as originally planned.

You’ll often hear well-known traders make the following suggestion and it sounds like a great idea: Take half off and let the remaining shares ride. Now you’re “playing with house money” as it were.

SAGE ADVICE, OR THE WORST OF BOTH WORLDS?

That sounds like a reasonable approach, but there are hidden costs to taking partial profits that most traders don’t realize.

Figure 1 shows a chart representing two ways of trading a profitable trading strategy. One line represents the normal equity curve of the strategy without taking any partial profits, and the other represents the same system but taking half of the position

off when a certain level of profit is achieved.

That’s a significant shortfall! What’s going on here?

The issue is that most of a trading system’s profits come from a relatively small number of profitable trades. If you consistently are halving those positions before they reach full

profit, then those big winners aren’t able to realize their full potential contribution to your bottom line.

When you zoom out and compare the benefits of the trades where the partial yielded a positive result and the costs when they yield a negative result, there’s a significant gap.

In situations where you turn a losing trade into a profitable one by taking a partial profit, the improvement is modest.

Compare that to taking the most profitable trades in your system and dividing the profit by half.

It turns out that the negative effects

There are hidden costs to taking partial profits that most traders don’t realize.

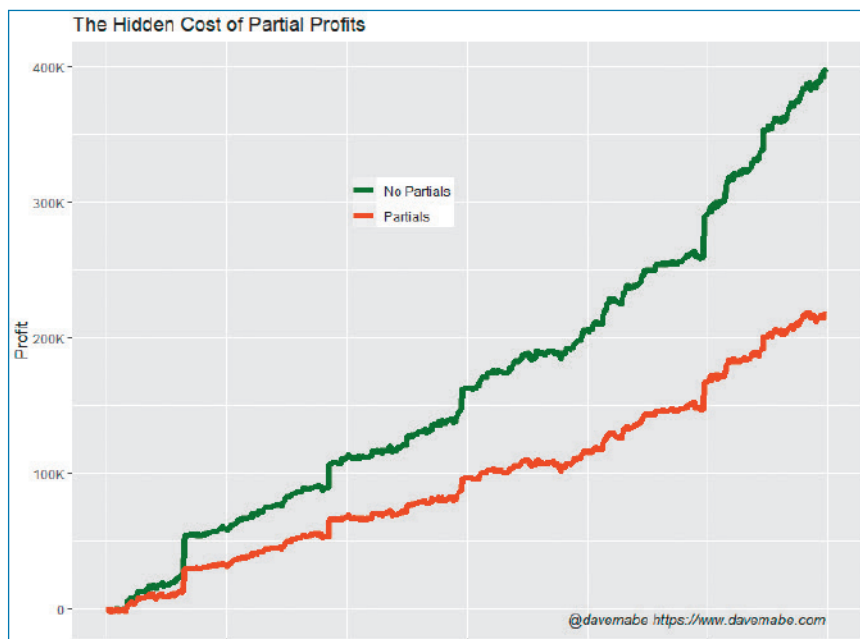


FIGURE 1: TAKING PARTIAL PROFITS VS. KEEPING FULL POSITION, EXAMPLE EQUITY CURVES.

The green equity line represents the equity curve of the sample strategy without taking any partial profits. The red equity line represents the same system but taking half of the position off when a certain level of profit is achieved.

Strategy Corner

on your system's most profitable trades overwhelm any gains. The net effect on your total profit is decidedly negative.

Does that mean you should never take a partial profit no matter what your situation? Not necessarily.

It still might make sense for you to take partial profits. There is some psychological comfort that you get from locking in profits, and that can be beneficial in the long run.

WHEN PARTIAL PROFITS MAKE SENSE

Even when you realize that you're optimizing for the wrong variable by taking partial profits, it *still might make a lot of sense to take them*. Here are some scenarios where it might

make sense to value the comfort from partial profits more highly on the margins:

- You're trading a strategy that has *longer hold times*—the longer the hold times, the more likely you'll be in a profitable trade that eventually pulls back
- You trade with size that's large enough to *substantially move the market*, so exiting all at once is difficult
- You're currently in a drawdown and you really prefer to avoid more losing trades even if they're just barely profitable
- You trade at a proprietary trading firm and you settle up each month

In situations where you turn a losing trade into a profitable one by taking a partial profit, the improvement is modest.

Any of these situations would make you value peace of mind more highly.

Is it worth all the profits that you'll be giving up in your best trades? That's for you to decide, but make sure you're looking at the entire picture and consider what you're giving up in return for some peace of mind.

Find similar articles online at [Traders.com](https://www.Traders.com)



Algo Q&A

DAVEY

Continued from page 37

year performance? The answer is very little.

Looking at all your statements in total, I'd conclude that algo trading is not for you. If I wanted to go live

my life in peace, I'd simply invest in index ETFs, and settle for average performance. Most active traders and investors cannot even match that benchmark. And with passive investing, there will certainly be losing years. But the simplicity of such an approach might be better suited to your temperament than

Diversification is one important key to algo trading success.

algo trading would be.

Find similar articles online at [Traders.com](https://www.Traders.com)



**YOUR ONLINE RESOURCE
FOR TECHNICAL ANALYSIS**

 Join us on Facebook at www.facebook.com/STOCKSandCOMMODITIES

 Follow us on Twitter @STOCKSandCOMM

Traders.com



A Synergistic Approach

Augmenting Financial Analysis With Artificial Intelligence

Need a little demystification on how AI is being applied to the financial field? Here's a quick look at some features of AI and its transformative potential for collaboration between humans and machines in market analysis.

by Diana Wolf Torres



today's financial markets, where information flows at lightning speed and data volumes soar, seasoned analysts can no longer rely solely on experience. To stay ahead of the curve, forward-thinking professionals are investigating the power of artificial intelligence (AI) to supercharge their analytical capabilities and unlock hidden insights buried within the complexities of the market.

AI'S TRANSFORMATIVE IMPACT ACROSS THE FINANCIAL SPECTRUM

AI's influence is far-reaching. Here's where it excels from an operational and tactical standpoint:

- **Fraud detection:** Robust AI algorithms analyze real-time data streams, pinpointing potential fraudulent activities with a precision that surpasses traditional rule-based systems.
- **Risk management:** Sophisticated AI models assist in quantifying market, credit, and operational risks, enabling preemptive action and informed investment strategies.
- **Portfolio optimization:** AI empowers advisors with data-driven insights to construct portfolios tailored to individual risk tolerances and dynamically adjust allocations based on evolving market conditions.

AI-POWERED MARKET ANALYSIS: A PARADIGM SHIFT

The true transformative power of AI lies in its ability to revolutionize market analysis and trading strategies. Here are some ways it is being used:

- **Unveiling hidden market dynamics:** AI transcends simplistic trend analysis, dissecting complex mar-

ket data to identify intricate patterns, correlations, and nonlinear relationships imperceptible to the human eye.

- **High-frequency algorithmic trading:** AI enables automated execution of trades at lightning speed, capitalizing on ephemeral market opportunities and adapting strategies in real time to mitigate risk.
- **Client-centric insights:** AI facilitates hyper-personalization in banking and wealth management, empowering advisors with nuanced client profiles and tailored recommendations.

DECODING THE AI LEXICON IN FINANCE

Embracing AI requires understanding its language. Here are some of the parallels between AI and traditional finance:

- **Quantitative techniques vs. supervised learning:** Familiar statistical methods like linear regression find their counterpart in supervised machine learning algorithms, with both aiming to predict values or classify outcomes.
- **Technical analysis vs. feature engineering:** The meticulous study of charts translates to crafting meaningful features from raw market data—the essential fuel for training AI models.
- **Risk/reward metrics vs. model evaluation:** AI models, much like trading strategies, are rigorously evaluated using performance metrics such as accuracy, precision, recall, and F1-score.

AI TERMINOLOGY FOR FINANCE

Here are some key AI concepts and definitions:

- **Supervised/unsupervised learning:** These are techniques for training AI models to predict outcomes or discover hidden patterns within data.
- **Neural networks (deep learning):** Refers to computational models inspired by biological neural networks. Neural networks excel at complex pattern-recognition tasks.
- **Natural language processing (NLP):** This technology enables AI to understand and generate human-like text, unlocking insights from financial news and reports.
- **Reinforcement learning:** AI learns through trial and error, optimizing trading strategies based on market feedback.
- **Backtesting vs. cross-validation:** These are practices for evaluating trading strategies and AI model performance on historical data.

THE HUMAN-AI ADVANTAGE: A WINNING COMBINATION

While AI is powerful, it's crucial to recognize that it's not a replacement for human expertise. True success lies in a hybrid approach.

AI can help you to unveil correlations that might never spot on your own, but validating those insights with your market knowledge makes a difference.

You may wonder if a machine could really beat decades of experience. Yet as you start to embrace the new technologies, you will begin to see AI's potential. It can become a perfect complement to your own knowledge.

FINAL THOUGHTS

In the ever-evolving financial landscape, adaptability is paramount. Those who proactively embrace and understand AI position themselves at the forefront of innovation. However, for financial professionals, it's essential to remember that AI systems in finance must be transparent, explainable, and accountable in order to maintain trust and to comply with any finance industry regulations that may be in place.

The AI revolution isn't about disruption but rather about empowerment. By understanding AI, harnessing its tools, and fostering collaboration between human experience and machine intelligence, analysts can tap into new insights and make more informed decisions. Knowledge is power in this field, and those committed to continuous learning and upskilling in AI will stand apart in this transformative era.

Diana WolfTorres is a seasoned communications strategist with over two decades of experience in the tech and AI sectors. Based in Silicon Valley, she has a rich history of collaborating with industry pioneers, including work with Vint Cerf, known as one of the “the fathers of the internet.” Her expertise also includes spearheading educational initiatives in STEM. She publishes the “Deep Learning Daily” newsletter on LinkedIn, created to help demystify complex AI concepts and to explore their potential to revolutionize industries, including finance. She can be reached at diana.wolf.torres@gmail.com.

Find similar articles online at [Traders.com](https://www.Traders.com)

While AI is powerful, it's crucial to recognize that it's not a replacement for human expertise.





Economic Weather Vanes

The Schannep And Sahm Recession Indicators

Getting ahead of the next recession can set you up for profitable trading opportunities. But how do you detect when a recession arrives? One indicator in the news recently is the Schannep recession indicator, and it's easy to calculate. A related indicator is the Sahm rule. Here's how to put them to use.

by Greg Aharonian

started, if not after it has ended.

While there are many recession indicators, here's one that has a good track record and is easy to calculate: the Schannep recession indicator, along with the related Sahm indicator.

First, I'll review what the Schannep indicator is, then I'll review its history.

CALCULATING THE INDICATOR

The Schannep indicator's calculations are straightforward. First, go the website of the U.S. Bureau of Labor Statistics (BLS) and examine their dataset "Labor Force Statistics from the Current Population Survey," which provides monthly national unemployment data.

Next, calculate the average of the last three months of unemployment data from the table provided by the BLS. As of June 2024, the last three months of data and their rates are: March (3.8%), April (3.9%), May (4.0%), for an average recent unemployment rate of 3.9%.

Next, look back for the next most recent three-month low in the unemployment rate. Again, using the BLS data, in 2022, we had a three-month low, with February

Economic cycles and stock market cycles are always in the making and always in our midst. There will always be a "next" recession and stock market decline; it's just a question of *when*. We should all be aware that it could and will happen. Or, as "Game of Thrones" fans might say, "Winter is coming." It's always smart to be prepared. But when do you start buying, say, six-month put options on the SPY? How can you predict the beginning of the next recession, when "recession" is such an arbitrarily defined economic term? Indeed, the National Bureau of Economic Research, the arbiter of declaring recessions in the U.S., only does so after a recession has

(3.6%), March (3.5%), and April (3.4%), for an average past unemployment rate low of 3.5%.

The Schanep recession indicator (SRI) states that we are in a recession if the current average is at least 0.4% greater than the average rate at the most recent low. Since that recent low average was 3.5% and the current low average is 3.9%, then according to the SRI, the economy is in a recession.

That's it. And according to studies surrounding the Schanep recession indicator, the market drops an average of 16% after the SRI rule is met and a recession ensues. The SPY was at 542.78 on June 14, 2024. A 16% drop would be about \$86. As I write this, you can buy a June 2025 put option on the SPY for about \$43. Assuming the market drops that 16% sometime in the next year (probably after the November 2024 U.S. election, which is likely to bring a good amount of disruption), you would be \$86 or so in the money, a 200% return.

HISTORY OF THE INDICATOR

The SRI was first described in a report in 2000 made available at TheDowTheory.com, written by Jack Schanep. Quoting the article: "On 13 occasions since 1948, when the Bureau of Labor Statistics data on the civilian labor force unemployment rate began, the level has risen four-tenths of a percentage point on a three-month moving average basis from the cyclical low three-month average. On all 13 occasions, a recession was just starting or was about to begin. (Note: once, the indicator was 6 months early but then a second signal was given during that coming recession.)"

At the website for his ideas (schanep.com), there is a table listing all the past recessions as declared by the National Bureau of Economic Research, the date when the SRI triggered, and the lag between the recession start and the SRI triggering, typically one to four months.

So according to the SRI, we are in a recession. Again quoting the website: "This indicator can be used as a sell indicator, as the average drop after the signal has been -16%." The indicator is further described in Schanep's book *Dow Theory For The 21st Century*.

Schanep.com also provides (for a fee) four more signals: when a bear market has started, when a bear market reaches its lows, when a bull market has started, and when a recession ends.

THE SAHM RULE

Related to the SRI is the Sahm rule. With the Sahm rule, the difference in the two measurements has to be 0.5% (versus 0.4% for the SRI). Also, the Sahm rule uses a trailing 12-month low versus the SRI's most recent cyclical

low. As I write this, the Sahm rule has *not* triggered.

SELL ALL AND BUY JUNE 2025 SPY PUTS?

Ahhh, probably not. As statisticians love to say, correlation is not causation. A September 2017 report titled "Evaluation and Ranking of Market Forecasters" published by the University of Technology Sydney analyzed 54 forecasters (including Schanep) and concluded: "... the majority of forecasters perform at levels not significantly different than chance ...". Interestingly, the SRI had one of the highest accuracy rates. While the report focused on timeframe accuracy, with options, this is less important, if you can buy long-term options at a good price.

CONCLUSION

Would I (no, *will I*—winter is coming!) invest solely relying on the SRI? No. But I will continue to monitor other indicators as well, and maybe I'll keep an eye on a long-term trend change indicator. And then, when the indications line up, I will buy my puts.

One final note: Keep in mind this is an election year. In my opinion, it's not likely a crash will occur in the markets prior to an election (a market crash is different from a recession-able economy). Looking at the market itself, as of mid-June 2024, the S&P 500 was up about 17% for the year, a bit more than average for election years. So maybe we'll get a pullback this year, but likely not a crash. But come January? We'll see.

Gregory Aharonian is founder of KukaXoco Finance. He can be reached at greg.aharonian@kukaxoco.org.

FURTHER READING

Bureau of Labor Statistics, "Labor Force Statistics from the Current Population Survey," retrieved from: <https://data.bls.gov/timeseries/LNS14000000>

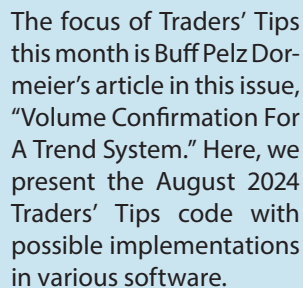
Schanep, Jack. "Signal #1—The Schanep Recession Indicator," <https://schanep.com>.

_____. *Dow Theory for the 21st Century: Technical Indicators for Improving Your Investment Results*.

Hulbert, Mark. "This Spot-on Recession Indicator is Flashing Red," MarketWatch, June 15, 2024, retrieved from: <https://www.marketwatch.com/story/the-latest-unemployment-report-has-triggered-this-spot-on-recession-indicator-08f2785d>

Salehipour, Amir. "Evaluation and Ranking of Market Forecasters," Univ. of Technology Sydney, September 2017, retrieved from: <https://pdfs.semanticscholar.org/afca/37db6aa17f5be8e5d1ebb93c40cf52413123.pdf>





At Traders.com you can also right-click on any chart to open it in a new tab or window and view the chart at a much larger size.

The Traders' Tips section is provided to help readers implement a selected technique from an article in this issue or another recent issue. The entries here are contributed by software developers or programmers for software that is capable of customization.

◆ **TRADINGVIEW: AUGUST 2024 TRADERS' TIPS CODE**

```
// TASC Issue: August 2024 - Vol. 42
// Article: Volume Confirmation For A Trend System.
// The Trend Thrust Indicator And
// Volume Price Confirmation Indicator.
// Article By: Buff Pelz Dormeier
// Language: TradingView's Pine Script™ v5
// Provided By: PineCoders, for tradingview.com
```

```
//@version=5
string title = "TASC 2024.08 Volume Confirmation For A Trend
System"
string stitle = "VCTS"
strategy(title, stitle, false)

// Input
```

```

lenADX = input.int(14, "ADX Length", 1)
smt = input.int(14, "ADX Smoothing", 1, 50)
fastTTI = input.int(13, "TTI Fast Average", 1)
slowTTI = input.int(26, "TTI Slow Average", 1)
smtTTI = input.int(9, "TTI Signal Length", 1)
shortVP = input.int(5, "VPCI Short-Term Average", 1)
longVP = input.int(25, "VPCI Long-Term Average", 1)

// ADX
upDM = ta.change(high)
dwDM = -ta.change(low)
pDM = na(upDM) ? na : upDM > dwDM and upDM > 0 ?
upDM : 0
mDM = na(dwDM) ? na : dwDM > upDM and dwDM > 0 ?
dwDM : 0
ATR = ta.atr(lenADX)
pDI = fixnan(100 * ta.rma(pDM, lenADX) / ATR)
mDI = fixnan(100 * ta.rma(mDM, lenADX) / ATR)
ADX = 100 * ta.rma(math.abs((pDI - mDI) / (pDI + mDI)), smt)

```

```
// TTI
// ref: https://www.tradingview.com/script/B6a7HzVn/
fastVWMA = ta.vwma(close, fastTTI)
slowVWMA = ta.vwma(close, slowTTI)
VWMACD = fastVWMA - slowVWMA
volMult = math.pow((fastVWMA / slowVWMA), 2)
```

```
VEFA = fastVWMA * volMult
VESA = slowVWMA / volMult
TTI = VEFA - VESA
signal = ta.sma(TTI, smaTTI)
```

```
// VPCI
// ref: https://www.tradingview.com/script/n8puJoAS/
VPC = ta.vwma(close, longVP) -
ta.sma(close, longVP)
VPR = ta.vwma(close, shortVP) /
ta.sma(close, shortVP)
VM = ta.sma(volume, shortVP) /
ta.sma(volume, longVP)
VPCI = VPC * VPR * VM
```

```
// Plot
col1 = #4daf4a50
col2 = #e41a1c20
col0 = #ffffff00
adxL1 = plot(ADX, "ADX", #984ea3)
adxL0 = plot(30, "ADX Threshold",
#984ea350)
```



FIGURE 1: TRADINGVIEW. This demonstrates the trend-following trading system using the ADX, the trend thrust indicator (TTI), and the volume price confirmation indicator (VPCI).



```
ttiL1 = plot(TTI, "TTI", #ff7f00)
ttiL0 = plot(signal, "TTI Signal", #ff7f0050)
vpcL1 = plot(VPCI*10,"VPCI", #377eb8)
vpcL0 = plot(0, "VPCI Zero", #377eb850)
fill(adxL1, adxL0, ADX > 30 ? col1 : col0)
fill(ttiL1, ttiL0, TTI > signal ? col1 : col0)
fill(vpcL1, vpcL0, VPCI > 0 ? col1 : col2)
```

```
// Strategy entry/exit rules
if ADX > 30
    if TTI > signal
        if VPCI > 0
            strategy.entry("entry", strategy.long)
if VPCI < 0
    strategy.close_all("exit")
```

The script is available on TradingView from the PineCodersTASC account: <https://www.tradingview.com/u/PineCodersTASC/#published-scripts>

An example chart is shown in Figure 1.

—PineCoders, for TradingView
www.TradingView.com



◆ REALTEST: AUGUST 2024 TRADERS' TIPS CODE

In "Volume Confirmation For A Trend System" in this issue, Buff Dormeier discusses several indicators and discusses his development of a trend-following system based on the indicators. Provided here is a RealTest script that implements the indicators and backtests. There are some notes in the script itself providing some additional details about the script.

Notes:

Buff Pelz Dormeier "Volume Confirmation For A Trend System", TASC, August 2024.

Implements all the indicators mentioned in the article and used in the research.

Shows how to run the sequence of backtests the author describes.

This example uses Norgate data with historical index constituency series.

Import:

```
DataSource: Norgate
IncludeList: .S&P 500 Current & Past
IncludeList: SPY
StartDate: 1993-01-01
EndDate: Latest
SaveAs: spx.rtd
```

Settings:

```
DataFile: spx.rtd
StartDate: Earliest
EndDate: Latest
BarSize: Daily
AccountSize: 100000 // 100k
// generates a meaningful test name when looping over the methods
```

```
TestName: Item("name{#}", method)
```

Library:

```
// names for test loop output
name1: "MACD only"
```

```
name2: "MACD and OBV"
name3: "MACD and VPCI"
name4: "TTI and VPCI"
```

Parameters:

```
// trend signal methods tested by the author
method: from 1 to 4 // loop over test types
// indicator parameters
len_macd_fast: 12
len_macd_slow: 26
len_macd_smooth: 9
len_obv_smooth: 8
len_vpci_fast: 7
len_vpci_slow: 28
len_vpci_smooth: 9
len_tti_fast: 12
len_tti_slow: 26
len_tti_smooth: 9
len_adx: 7
```

Data:

```
// --- Indicator Calculations ---
```

// MACD

```
macd_line: MACD(len_macd_fast, len_macd_slow)
macd_signal: MACDS(len_macd_fast, len_macd_slow,
len_macd_smooth)
macd_buy: Cross(macd_line, macd_signal)
macd_sell: macd_line < macd_signal
```

// OBV

```
obv_line: nonan(obv_line[1]) + V * sign(C - C[1])
obv_signal: MA(obv_line, len_obv_smooth)
obv_confirm: obv_line > obv_signal
obv_sell: obv_line < obv_signal
```

// VPCI (charts match author's examples)

```
vpci_fast_avg: VWMA(C, len_vpci_fast)
vpci_slow_avg: VWMA(C, len_vpci_slow)
vpci_vpc: vpci_slow_avg - MA(C, len_vpci_slow)
vpci_vpr: vpci_fast_avg / MA(C, len_vpci_fast)
vol_ratio: MA(V, len_vpci_fast) / MA(V, len_vpci_slow)
vpci_line: vpci_vpc * vpci_vpr * vol_ratio
vpci_signal: MA(vpci_line, len_vpci_smooth)
vpci_confirm: vpci_line > vpci_signal
vpci_sell: vpci_line < vpci_signal
```

// TTI (chart matches IBM example on Optuma website)

// translated from TS code in author's Oct-2011 letter to the magazine

```
tti_fast_avg: VWMA(C, len_tti_fast)
tti_slow_avg: VWMA(C, len_tti_slow)
tti_ema_diff: EMA(C, len_tti_fast) - EMA(C, len_tti_slow)
tti_v_factor: VWMA(V, len_tti_fast) / EMA(V, len_tti_slow)
* 10
tti_iv_factor: VWMA(V, len_tti_slow) / EMA(V, len_tti_fast)
* 10
tti_fast: tti_fast_avg / (tti_v_factor / tti_iv_factor)
tti_slow: (tti_iv_factor / tti_v_factor) * tti_slow_avg
tti_spread: tti_fast - tti_slow
tti_v_avg: VWMA(tti_v_factor, len_tti_fast) / EMA(tti_iv_factor, tti_slow) * len_tti_smooth
tti_avg_spread: Round(VWMA(tti_spread, tti_v_avg), 0.001)
tti_line: tti_spread
tti_signal: tti_avg_spread
tti_buy: Cross(tti_line, tti_signal)
```

```

// ADX
adx_value: ADX(len_adx)
adx_buy: adx_value > 30

// --- Trading Signals for each
method tested ---

// MACD only
buy1: adx_buy and macd_buy
sell1: macd_sell

// MACD and OBV
buy2: adx_buy and macd_buy
and obv_confirm
sell2: obv_sell

// MACD and VPCI
buy3: adx_buy and macd_buy
and vpci_confirm
sell3: vpci_sell

// TTI and VPCI
buy4: adx_buy and tti_buy and
vpci_confirm
sell4: vpci_sell

// Method-specific signal selection
buy: Item("buy{#}", method)
sell: Item("sell{#}", method)

Strategy: spx_stocks
Side: Long
Quantity: 5
QtyType: Percent
MaxExposure: 100
// the author does not say how he ranked setups when
there were too many
// here the ADX value is used
SetupScore: adx_value
EntrySetup: buy and InSPX // was historical constituent on
that date
ExitRule: sell

Benchmark: spy_index_hold
Side: Long
EntrySetup: Symbol=$SPY

Charts:
// {^} means upper pane, {} means lower pane
// comment indicators in/out as desired
// (realtest only supports two non-bar panes and one scale
per pane)

// MACD
// macd_line: macd_line {}
// macd_signal: macd_signal {}
// OBV
// obv_line: obv_line {^}
// obv_signal: obv_signal {^}
// VPCI
vpci_line: vpci_line {^}
vpci_signal: vpci_signal {^}
// TTI
tti_line: tti_line {}
tti_signal: tti_signal {}

```

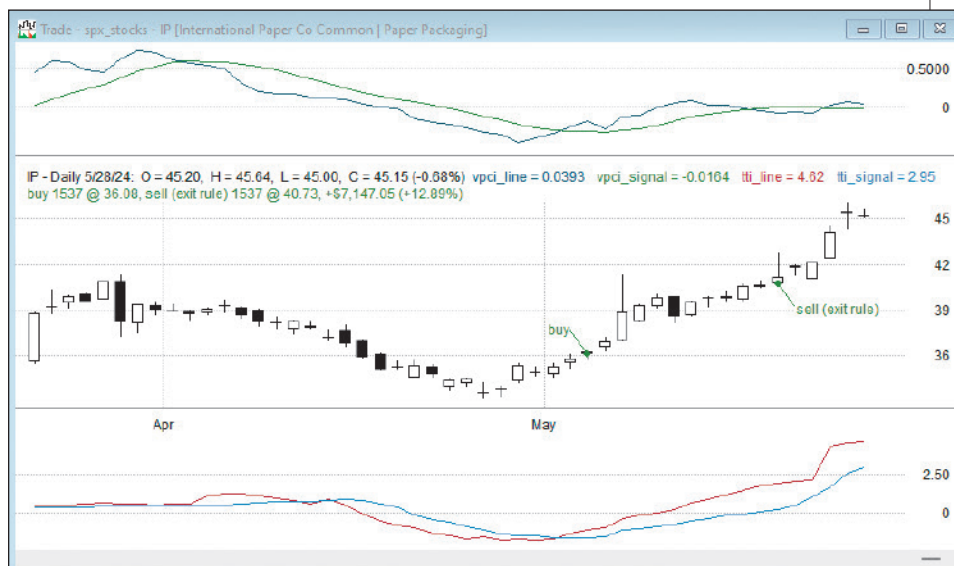


FIGURE 2: REALTEST. This shows an example trade signal from a backtest of the trend system. The VPCI and TTI are plotted in the upper and lower panes, respectively.

Figure 2 shows an example trade from the backtest with the VPCI and TTI plotted in the upper and lower panes.

—Marsten Parker
MHP Trading, Mhptrading.com
mhp@mhptrading.com

WealthLab.com

◆ **WEALTH-LAB: AUGUST 2024 TRADERS' TIPS CODE**

In “Volume Confirmation For A Trend System” in this issue, Buff Dormeier discusses his development of a trend-following system based on several indicators, including the ADX, TTI,

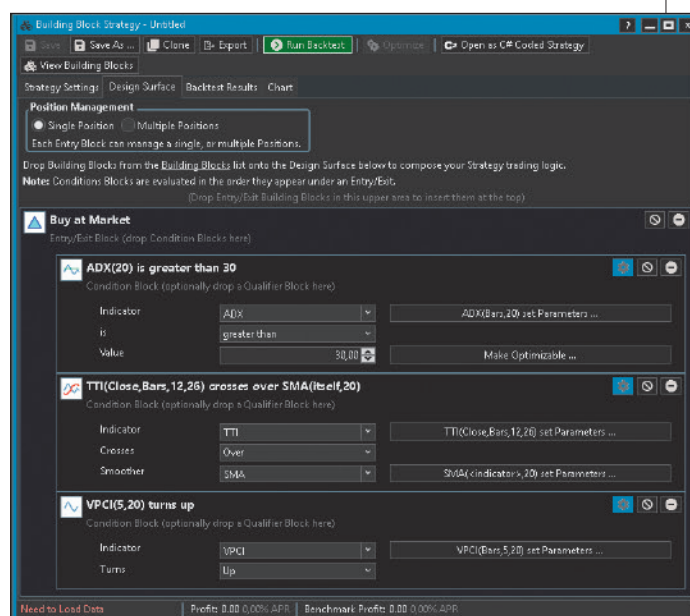


FIGURE 3: WEALTH-LAB. This screenshot shows the rules for the trend-following system as expressed in the Building Blocks feature, which lets the user build a system without code.



FIGURE 4: WEALTH-LAB. This demonstrates a sample trade signal from the trend-following system in SPY. The TTI is shown with its signal line and the VPCI and ADX are plotted in the lower panes.

and VPCI.

Since the exact rules of the trading system aren't given in the article, we used his description of his earlier version of the model and we modified those rules to suit his latest additions to the system, as follows:

- Assign 5% equity to a position
- ADX greater than 30
- TTI indicator crosses above its signal line
- VPCI turns up for trend confirmation

Figure 3 demonstrates using Wealth-Lab's Building Blocks feature to express the trading system's rules without having to use code or without having to code the rules yourself.

The resulting system requires you to install two Wealth-Lab Extensions to function properly:

- the latest build of Advanced Smoothers (to use the TTI indicator)
- PowerPack (to use the VPCI indicator)

As for exit rules, you could make up an exit block to mirror the VPCI condition, that is, change it to “VPCI turns down” to reflect contradicting behavior.

Figure 4 shows an example of the indicator combo in action, showing the TTI with its signal line and VPCI and ADX in plots at the bottom.

—Gene Geren (*Eugene*)

Wealth-Lab team

www.wealth-lab.com



◆ **NEUROSHELL TRADER: AUGUST 2024 TRADERS' TIPS CODE**

The volume price confirmation indicator (VPCI) can be easily implemented in NeuroShell Trader by combining a few of NeuroShell Trader's 800+ indicators. To implement the VPCI, select "New indicator ..." from the insert menu and use the indicator wizard to create the following indicators:

VWMA:

VolWgtMovAvg (Close, Volume, 50)

VPC:

Subtract (VolWgtMovAvg (Close, Volume, 50), MovAvg (Close, 50))



FIGURE 5: NEUROSHELL TRADER. This example chart plots the volume price confirmation indicator (VPCI).

VPR:

Divide (VolWgtMovAvg (Close, Volume, 10), MovAvg (Close, 10))

VM:

Divide (MovAvg (Volume, 10
) , MovAvg (Volume, 10))

VPCI:

Multiply3 (VPC, VPR, VM)

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.

—Ward Systems Group, Inc.

sales@wardsystems.com

www.neuroshell.com





The automation is a case of VBA code modifying VBA code and will require just a bit of intervention on your part to set the Excel application permissions to allow VBA to alter other VBA on the fly.

See the tab labeled “April 15 Repairs” (Figure 8) in this month’s spreadsheet for step-by-step instructions to get Excel permissions set correctly and then begin the process of repairing your older spreadsheets.

See the *notes* tab for a bit more discussion of the problem that began on April 15, 2024 and the solution.

This Automated Repair mechanism should be able to repair any Traders' Tips spreadsheets from **May 2021** (RateOfChangeWithBands.xlsm) to **May 2024** (EhlersUltimateChannelsAndBands.xlsm).

Attempting to use older spreadsheets without the fix will most likely fail, with any of a number of possible error messages and error codes.

To download this spreadsheet: The spreadsheet file for this Traders' Tip can be downloaded from www.traders.com in the Traders' Tips area. To successfully download it, follow these steps:

- Right-click on the link to the Excel file, then
- Select “save target as” to place a copy of the spreadsheet file on your hard drive.

—Ron McAllister
Excel and VBA programmer
rpmac_xlitt@sprynet.com



◆ **AIQ: AUGUST 2024 TRADERS' TIPS CODE**

The AIQ code for VPCI and related indicators is given below. This code can be used to develop trading systems, or the indicator can be used as a filter for existing systems. I tried different plotted indicator displays and decided that two smoothed VPCI indicators plotted as a histogram, which shows the difference between the two smoothed indicators, would give the most useful display. The indicator plot shown in Figure 9 uses parameters of 50 and 10 days to compute the VPCI, then takes two simple averages of this VPCI using 5 days and 10 days. The difference between these two smoothed indicators is then plotted as a histogram.

!! CONNECTION & AFFINITY BETWEEN PRICE & VOLUME
! Author: Buff Dormeier, TASC July 2007
! Coded by: Richard Denning 5/11/07

! PARAMETERS
Price is [close].
LT is 50.
ST is 10.
S is 5.
SS is 10.

! SIMPLE MOVING AVERAGE OF PRICE (SMA)
SMA_L is $\text{sum}(\text{Price}, \text{LT}) / \text{LT}$.
SMA_S is $\text{sum}(\text{Price}, \text{ST}) / \text{ST}$.

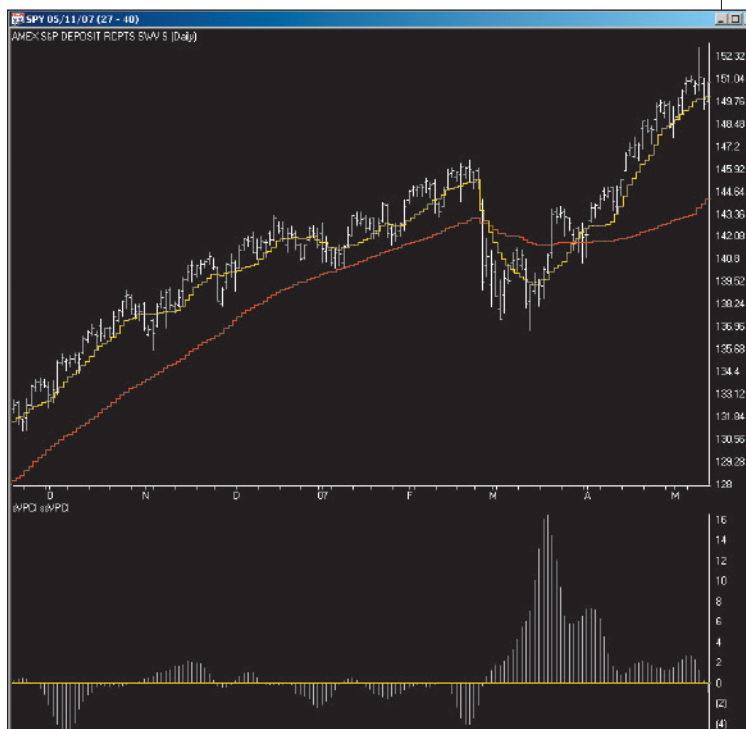


FIGURE 9: AIQ. SPY shown with 50-day VWMA (red), 10-day VWMA (yellow) and sVPCI, ssVPCI (50,10,5,10) historigram (lower indicator plot in white).

V is [volume].

```
! VOLUME-WEIGHTED MOVING AVERAGE (VWMA)
VTOT_L is sum(V,LT).
VWMA_L is sum(Price * (V / ^VTOT_L),LT).
VTOT_S is sum(V,ST).
VWMA_S is sum(Price * (V / ^VTOT_S),ST).
```

! VOLUME-PRICE CONTRADITION/CONFIRMATION (VPC + / -)
VPC is VWMA L - SMA L.

! VOLUME PRICE RATIO (VPR)
VPR is VWMA S / SMA S.

! VOLUME MULTIPLIER (VM)
VMA_S is $\text{sum}(V, ST) / ST$.
VMA_L is $\text{sum}(V, LT) / LT$.
VM is VMA_S / VMA_L .

! VOLUME-PRICE CONFIRMATION INDICATOR (VPCI)
VPCI is $VPC * VPR * VM$.

! SMOOTHED VOLUME-PRICE CONFIRMATION INDICATOR(sVPCI)
sVPCI is $\text{sum}(\text{VPCI}, S) / S$.
ssVPCI is $\text{sum}(\text{VPCI}, SS) / SS$.

! INDICATOR FOR HISTORIGRAM PLOTTING.
dsVPC[ss is sVPC] - ssVPC[.

—Richard Denning
rdencpa@gmail.com
for AIQ Systems



FREE INFORMATION FROM ADVERTISERS

Advertiser	Page	Advertiser	Page
BROKERAGES		SOFTWARE	
Charles Schwab Schwab.com/Trading	13	AbleSys www.ablesys.com/SCM	7
Interactive Brokers ibkr.com/around-clock	3	Charles Schwab Schwab.com/Trading	13
Ninjatrade ninjatrade.com	56	MetaStock MetaStock.com/P424	5
PUBLICATIONS		Ninjatrade ninjatrade.com	56
Stocks & Commodities Store.Traders.com, Traders.com	2, 55	WEBSITES	
		Stocks & Commodities Store.Traders.com, Traders.com	2, 55



EDITORIAL RESOURCE INDEX

TradingView.com	6	AIQ	51
Optuma.com	10		
Microsoft Excel	17		
EasyLanguage/TradeStation	20		
MultiCharts	23		
OptionsAnalysis.com	28		
StockCharts.com	38		
DaveMabe.com	40		
RealTest	47		
Wealth-Lab.com	48		
NeuroShell Trader (Ward Systems Group)	49		



For more information about our advertisers, go to **Traders.com/reader** where you will find the alphabetized list of this month's advertisers. For reference, the list is also printed above along with the corresponding page number for each ad. Just follow the simple directions below and the advertisers will get your requests the same day!

STEP 1: Go to **Traders.com/reader** and scroll through the list of our current month's advertisers. Click the box for each advertiser you'd like to hear from. At the bottom of the list, click **Continue** when finished.

STEP 2: Fill out your contact information and click **Send Request**. Your request will then be sent to the advertisers you selected. And that's it!

TECHNICAL ANALYSIS OF STOCKS & COMMODITIES

HOW TO REACH US

For questions, address changes, or ordering information for *Technical Analysis of STOCKS & COMMODITIES* magazine and its online publications:



Toll-free 800 832-4642
(800-TECHNICAL) or:
206 938-0570.



Email us at:
circ@traders.com.



Or write to us at:
4757 California Ave. SW,
Seattle, WA 98116-4499.

Do your magazines arrive tattered and torn? Polybagging of magazines (domestic delivery) is available for \$6/year.

Single back issues from the current year (subject to availability) are \$8 prepaid. Subscribers have access to our digital archive of all past articles. Individual articles can be purchased from the Online Store at our website, Traders.com.

EDITORIAL FEEDBACK

We always want to know more about the needs of our readers: What kinds of articles would you like to see more of? What do you find useful? Address your written questions and comments to editor@traders.com or to: Editor, STOCKS & COMMODITIES, 4757 California Ave SW, Seattle, WA 98116-4499. Sorry, we cannot perform research on individual financial questions not related to this magazine and we cannot respond to all mail. Letters or emails containing questions or information that other readers may enjoy or that relate to our articles or technical analysis topics may be published in our Letters to S&C column.



Join us on Facebook at
www.facebook.com/STOCKSandCOMMODITIES



Follow us on Twitter
@STOCKSandCOMM

To receive information on the products and services listed in the Editorial and Advertisers' Indexes, go to: Traders.com/reader. These indexes are published solely as a convenience. While every effort is made to maintain accuracy, last-minute changes may result in omissions or errors.

FUTURES LIQUIDITY

Tradings 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	Symbol	Exchange	% Margin	Effective % Margin	Contracts to Trade for Equal Dollar Profit	Relative Contract Liquidity
S&P 500 E-Mini (Sep '24)	ESU24	CME	4.7	12.9	2	>>>
Ultra T-Bond (Sep '24)	UDU24	CBOT	5.1	8.5	3	>>>
5-Year T-Note (Sep '24)	ZFU24	CBOT	1.4	8.5	13	>
10-Year T-Note (Sep '24)	ZNU24	CBOT	2.1	9.4	10	>
30-Year T-Bond (Sep '24)	ZBU24	CBOT	3.6	9.1	5	>
Ultra 10-Year T-Note (Sep '24)	TNU24	CBOT	2.7	8.3	6	>
2-Year T-Note (Sep '24)	ZTU24	CBOT	0.6	7.7	15	>
Soybean (Nov '24)	ZSX24	CBOT	2.3	4	4	>
Nasdaq 100 E-Mini (Sep '24)	NQU24	CME	4.9	10.5	1	>
Soybean Meal (Dec '24)	ZMZ24	CBOT	1.1	2.1	2	>
Gold (Aug '24)	GCQ24	COMEX	4.7	15.1	3	>
Corn (Dec '24)	ZCZ24	CBOT	6.3	7.6	13	>
Crude Oil WTI (Aug '24)	CLQ24	NYMEX	8.1	13.6	5	>
Russell 2000 E-Mini (Sep '24)	QRU24	CME	3.5	17.3	6	>
Wheat (Sep '24)	ZWU24	CBOT	8.1	5.4	6	>
3-Month SOFR (Dec '24)	SQZ24	CME	0.1	1.8	20	>
Natural Gas (Aug '24)	NGQ24	NYMEX	10.9	4.5	3	>
Euro FX (Sep '24)	E6U24	CME	1.7	15.1	16	>
30-Day Fed Funds (Aug '24)	ZQQ24	CBOT	0.1	1	11	>
Gasoline RBOB (Aug '24)	RBQ24	NYMEX	7	9.6	3	>
ULSD NY Harbor (Aug '24)	HOQ24	NYMEX	7.1	6.7	2	>
Cotton #2 (Dec '24)	CTZ24	ICE/US	6.4	5.5	6	>
Hard Red Wheat (Sep '24)	KEU24	KCBT	7.9	5.8	6	>
Palladium (Sep '24)	PAU24	NYMEX	14.1	5.7	1	>
Sugar #11 (Oct '24)	SBV24	ICE/US	7.5	17.6	26	>
Coffee (Sep '24)	KCU24	ICE/US	7.4	18.7	7	>
Dow Futures Mini (Sep '24)	YMU24	CBOT	4.6	16.4	4	>
High Grade Copper (Sep '24)	HGU24	COMEX	6.1	21.3	8	>
Live Cattle (Aug '24)	LEQ24	CME	3.6	10.2	9	>
S&P 500 VIX (Jul '24)	VIN24	CFE	43.6	28.5	11	>
Bitcoin Futures (Jun '24)	BTM24	CME	28.6	38	1	>
British Pound (Sep '24)	B6U24	CME	2.6	14.6	17	>
Canola (Nov '24)	RSX24	ICE/CA	5.8	5.9	20	>
Cocoa (Sep '24)	CCU24	ICE/US	21.9	30.2	4	>
S&P Midcap E-Mini (Sep '24)	EWU24	CME	5.6	20.7	3	>
Silver (Jul '24)	SIN24	COMEX	8.6	20.7	4	>
Canadian Dollar (Sep '24)	D6U24	CME	1.5	13.7	30	>
Australian Dollar (Sep '24)	A6U24	CME	2.4	16	24	>
Feeder Cattle (Aug '24)	GFQ24	CME	3.5	8.3	4	>
Lean Hogs (Aug '24)	HEQ24	CME	4.8	11.5	17	>
Spring Wheat (Sep '24)	MWU24	MGEX	7.9	6.1	6	>
Swiss Franc (Sep '24)	S6U24	CME	2.9	23.2	14	>

2408

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).

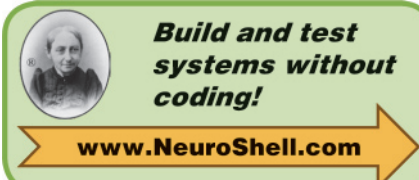
"Relative Contract Liquidity" places commodities in descending order according to how easily all of their contracts can be traded. Commodities at the top of the list are easiest to buy and sell; commodities at the bottom of the list are the most difficult. "Relative Contract Liquidity" is the number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

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

ADVISORY SERVICES

Yes, You Can Cash In On Chaos! Certified Chaos Traders Courses teach you how. Learn to earn at <http://moneytide.com?r=s> EMini MoonTide Hotline up **268 months** in a row <http://daytradingforecasts.com?r=s>

SOFTWARE



Build and test systems without coding!

www.NeuroShell.com

CLASSIFIED

TO ADVERTISE CONTACT:

Ed Schramm

ESchramm@traders.com • (206) 660 8577

TRADERS' RESOURCE

TOP 10 VIEWED CONSULTANTS FOR TRADERS



Consultants consult on just about every conceivable worry traders have, from tax advice to weather reporting. Can all this help you? Maybe.

The rules for checking out consultants are simple: Check references, check references, and (did you guess?) check references. Nothing can be more vague than a consultant's initial proposal, but nothing is clearer than a client's opinion on the success of a consultant's engagement. When checking references, make sure you use some references not supplied by the company you are evaluating.

That said and with that in mind, you must do your homework before calling a consultant in to help you. Be sure you can say in one sentence what you want the consultant to achieve. In addition, be sure you know of and can contact people who truly specialize in your area of concern, not simply someone who will take on any problem that someone dreams up. Again, references from others (and satisfied customers) are great leads.

TRADERS' RESOURCE AT TRADERS.COM

Traders' Resource is available at our website, Traders.com, where you'll find information on other products and services in numerous other categories, such as data services, brokerages, seminars, hardware, software, and trading systems. Just click on the Traders' Resource link. Then follow the Consultants category link, or use the search feature to find

Product	Company
1. Divergence Software, Inc.	Divergence Software, Inc.
2. Inside Edge Systems	Inside Edge Systems
3. HedgeLender, LLC	HedgeLender, LLC
4. Adrienne Laris Toghraie	Adrienne Toghraie: Trading on Target
5. TSDA Consulting	Trading Systems Design and Analysis
6. Sunny Harris & Associates, Inc.	Sunny Harris & Associates, Inc.
7. International Equity Placement	International Equity Placement
8. The Striker Report	Striker Securities
9. Traders Accounting	Traders Accounting
10. Futures Trading Secrets	Futures Trading Secrets

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

products or services with specific attributes in this or other categories. Services offered by the consultants in our online Traders' Resource listing may focus on a single specialty or be varied and may include custom software and hardware programming; systems integration; money management; trading psychology and coaching; specific markets; trading systems; and more.

The information in Traders' Resource is the most accurate at the time of posting and is subject to change. Because the vendors posting to Traders' Resource are responsible for their own listing, Technical Analysis, Inc. declines any and all liability for any representations made by the businesses and individuals listed. Nor can Technical Analysis, Inc. endorse any business or individual listed on Traders' Resource. Technical Analysis, Inc. makes no warranties, express or implied, as to the accuracy and reliability of claims herein. You agree to release Technical Analysis, Inc., together with its respective employees, agents, officers, directors and shareholders, from any and all liability and obligations whatsoever in connection with or arising from your use of Traders' Resource. If at any time you are not happy with the information posted to Traders' Resource or object to any material within Traders' Resource, your sole remedy is to cease using it. This list is updated frequently. If you are aware of a business that should be listed, please email us at Editor@Traders.com.

SUBSCRIBE OR RENEW TODAY!

Every Stocks & Commodities subscription (regular and digital) includes:

- Full access to our Digital Edition
The complete magazine as a PDF you can download.
- Full access to our Digital Archives
Every article since 1982!
- Complete access to WorkingMoney.com
The information you need to invest smartly and successfully.
- Access to Traders.com Advantage
Insights, tips and techniques that can help you trade smarter.

1 year **\$89⁹⁹**

2 years **\$149⁹⁹**

3 years **\$199⁹⁹**

PROFESSIONAL TRADERS' STARTER KIT

A 5-year subscription to S&C magazine that includes everything above PLUS a free* book, *Charting The Stock Market: The Wyckoff Method*, all for a price that saves you \$150 off the year-by-year price! *Shipping & handling charges apply for foreign orders.

5 years **\$299⁹⁹**

That's around \$5 a month!

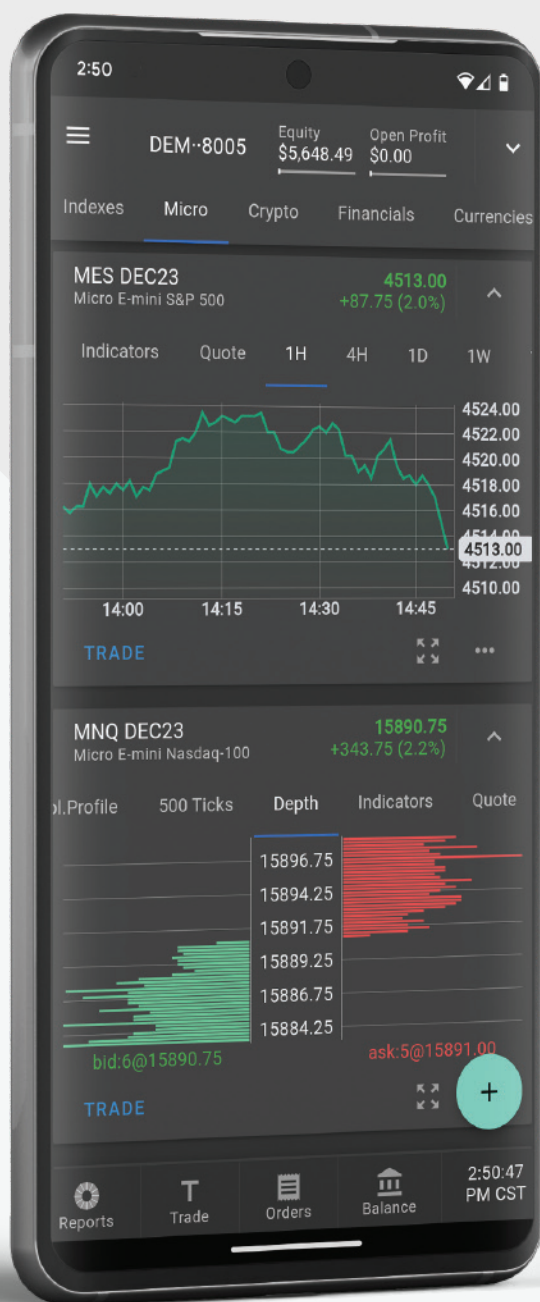


Visit **www.Traders.com** to find out more!

NINJATRADER

TRADE FUTURES WITH A LEADING BROKER

Explore the futures markets with our award-winning platform with \$50 intraday margins.



UNCOVER YOUR OPPORTUNITY
in futures trading with NinjaTrader:

- Simple pricing
- Low margins & commissions
- Risk-free simulated trading
- 1,000+ third-party tools & apps
- Daily livestreams & on-demand videos
- 100+ technical analysis tools
- 24/5 live support
- No deposit minimum requirement



**BETTER FUTURES
START HERE.**

Open your free
account today.