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This paper is part of CMG’s Investor Education Series and it summarizes the reasons why trend following may be an effective investment strategy. The paper cites a wide range of academic research that supports the strategy. It was originally published at cgmwealth.com.

A January 2016 investment study found that trend following is one of just a few investment factors that works consistently over time. Academics call it “time-series momentum,” but the investment approach is most commonly known as “trend following.”

In The Enduring Effect of Time-Series Momentum on Stock Returns Over Nearly 100-Years, by Ian D’Souza, Voraphat Srichanachaichok, George Wang and Chelsea Yaqiong Yao, the authors found trend following to be consistently profitable in different time periods. The research looked at the period from 1927 through 2014. The authors concluded that trend following works in all markets, large and small, everywhere. They believe investor behavioral tendencies to be the primary driver.

They analyzed 67 markets across four major asset classes – various commodities, equity indexes, bond markets and currency combinations – from 1903 to 2013 and also documented that time-series momentum or trend following was a consistently profitable viable strategy.

**Why does it work?** It is believed that price trends exist in part due to behavioral biases exhibited by investors. Such biases include anchoring to most recent past performance and expecting it to continue and herding into or out of an investment. Recall the extreme selling that took place in late 2008 and early 2009 or the tech buying frenzy of the late 1990s.

There are other causes as well, such as corporate hedging activity and central bank and government involvement (e.g., interest rate manipulation, QE asset purchases, etc.). However, investor behavior seems to be the significant driver that creates trends.

> “We tend to hang onto our views too long simply because we spent time and effort coming up with those views in the first place. This leads to confirmation bias and an anchoring to strongly held beliefs even if the evidence fails to support them anymore.” - James Montier, The Little Book of Behavioral Investing

Following are several highlights from the above-referenced research paper.
- The authors show that time-series stock momentum strategies produced significant profits in the US markets throughout the 88-year period from 1927 to 2014, exceeding the returns from other return factors such as value and size.
- The researchers found that time-series stock momentum is profitable regardless of formation and holding periods for 16 different combinations.
- The robustness of time-series stock momentum in the global equity market is a contradiction to the conventional wisdom of the random walk theory, which predicts that a stock's past price movement or direction cannot be used to predict its future movement.
- The authors found three pieces of evidence indicating that time-series stock momentum could be at least partially explained by two prominent theories of investors’ under-reaction (to news and or price activity). Interesting: time-series stock momentum profits increased from 0.20% (t-statistic = 1.45) for stocks with discrete information to 1.17% (t-statistic = 5.82) for stocks with continuous information.
- In other words, the more continuously the information arrives, the higher profits time-series momentum strategies generate.

“The fact that trend following strategies have performed well historically indicates that these behavioral biases and non-profit-seeking market participants have likely existed for a long time,” the authors stated.

We must concentrate on investment process, not emotion. Process is a predetermined set of rules about how you go about investing. The research addresses rules used in a trend following investment process.

When advisors build client portfolios, they consider diverse allocations to a number of different risks (stocks, bonds, cash and tactical/alternatives).

The study goes on to describe the data and portfolio construction processes tested and documents the profitability of time-series stock momentum strategies. It investigates the sources of those momentum profits and proposes an enhanced momentum strategy.

The bottom line is that given the diversification benefits and the downside (tail risk) hedging properties, a moderate portfolio allocation to trend following strategies merits consideration.

Concluding thoughts from the authors:

We document strong evidence of time-series momentum in individual equities that appears to dominate the value or size effect – the latter factors which are often connected to rational based models used by fundamental, active stock pickers.
Our results show that the existence of time-series stock momentum has been a persistent phenomenon in the U.S. equity markets throughout the 88-year period since 1927. Moreover, the profitability of the strategy is robust for 16 different combinations of formation and holding periods, different benchmarks and weighting systems in up and down markets thereby nullifying the documented weaknesses of stocks is small relative to other countries. Further, time-series stock momentum also prevails in the international markets.

We also looked at time-series momentum relative to common macro variables and found little correlation to dividend yield or bond rates as well as to GDP. To this point, we note that time-series momentum is weakly impacted by state of the market, including recessionary economic cycles, compared to cross-sectional markets. Counterintuitive to media perceptions, we also find no evidence that recent Federal Reserve Bank actions, by chairperson, have exacerbated the momentum effect.

Moreover, we find that behavioral models tend to explain the time-series momentum factor, although they do not categorically rule out advances in risk-based model explanations. Our results demonstrate that investors’ underreaction is the main source of time-series stock momentum profits.

There are hundreds of academic papers that study various market factors. Here are a few additional academic studies:

- In a 2014 paper, A Century of Evidence on Trend-Following Investing, the authors, Hurst, Ooi and Pedersen, sought to establish whether the strong performance of trend following is a statistical fluke of the last few decades or a more robust phenomenon that exists over a wide range of economic conditions over many years and differing market cycles.
- The Profitability of Momentum Strategies, Chan, Lakonishok and Jegadeesh, Investment Policy and Portfolio Management (1999).
- Market Cycles and the Performance of Relative Strength Strategies, Stivers and Sun, Financial Management (Summer 2013).
- 212 Years of Price Momentum, Dr. Christopher Geczy and Mikhail Samonov. One of the longest and most extensive studies on price momentum.
- Robert Shiller and Lars Peter Hansen won the 2013 Nobel Prize in Economics for their separate work on what drives asset prices.
- Daniel Kahneman and Amos Tversky won the Nobel Prize for their work on Prospect Theory: An Analysis of Decision Under Risk, Econometrica, Vol. 47, No. 2 (March 1979). They discovered that people react very differently to financial gains and losses. Identifying that investors are more than twice as sensitive to losses as
to gains. Kahneman later wrote that the concept of loss aversion was their most useful contribution to the study of decision making.

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Presenters

Mathew Verdouw, CMT, CFTe

For over 20 years, Mathew has been building the Technical Analysis software that is Optuma. Programming the models has given Mathew intimate knowledge on the theories of Technical Analysis. Working with CMTs all over the world has provided the practical implementation of how they’re used. Mathew completed his CMT designation in 2013.

Carson Dahlberg, CMT

Starting as an advisor for Morgan Stanley, then a trader at Wachovia, Carson discovered the effectiveness of Technical Analysis in managing opportunities, risk and emotions. Carson has previously taught CMT Prep courses. He serves on the MTA board, and is Chief Market Strategist for Optuma. Carson completed his CMT designation in 2008.

Enrollments open September 1
Email CMTPrep@Optuma.com to be notified.
Editor’s note: the following may be useful as a review for CMT candidates.

CHAPTER 13: SPECULATING IN VIX FUTURES ISN’T FOR EVERYBODY

In a Trader’s First Book on Commodities, the focus was to teach readers all they needed to know about the commodity markets before considering market strategy. I went into detail about each of the popular commodity markets and guided traders on how to calculate profit, loss, and risk, in each commodity market. However, a market that regrettably wasn’t discussed but has quickly become a popular topic in the trading community is the Chicago Board of Options Exchange (CBOE) listed volatility index, more commonly known as the VIX. Because of its exclusion from other books I’ve written, and the fact that I receive countless inquiries from my brokerage clients about trading it, I feel compelled to outline some of the advantages and disadvantages of trading the VIX. In addition, it is a unique product that isn’t offered at all futures brokerage firms. Thus, anybody interested in speculating in the VIX will want to keep this in mind when shopping around for a commodity broker.

“The CBOE describes the VIX as a “key measure of market expectations of near-term volatility conveyed by S&P 500 stock index option prices.” Because the VIX value is derived from the implied volatility (the portion of an option price attributed to expectations of future volatility) in S&P options, it is commonly referred to as the fear index. The VIX was introduced by the CBOE in the early 1990s and is often considered to be the benchmark barometer of investor sentiment and market volatility. Because the VIX is so widely watched and mentioned, it is only natural for futures traders to get involved. What started out as an informational index at the CBOE eventually became a highly popular, yet unique, leveraged futures trading instrument.
In essence, VIX futures give speculators an opportunity to directly trade human emotions, specifically fear and complacency. Those interested in attempting to profit from changes in investor sentiment will likely find the VIX a convenient trading vehicle. Yet it also requires a brassy attitude.

Nonetheless, there are some aspects of the VIX futures market that traders should be aware of before risking their trading capital. Trust me when I say, along with being among the most lucrative futures contracts available to trade, it is also the most unforgiving. There are unique attributes of VIX futures that should be known and largely work against speculators, but there are times in which the VIX offers relatively predictable opportunities for those with strong stomachs for risk. Let’s take a closer look.

**THE VIX IS NOT AN INVESTMENT VEHICLE, IT IS A TRADING VEHICLE**

Unlike traditional stock and bond investments, the VIX doesn’t pay dividends or interest, nor does it provide ownership of an underlying asset that holds value. Instead, the value of the VIX is purely derived by human opinion, emotion, and perception. Playing the VIX is highly speculative, even more so than any other commodity because the underlying is not an asset, it is an opinion. In contrast, commodity futures contracts are similarly leveraged and without income-producing elements, but their redeeming quality is being backed by tangible goods. Nonetheless, despite the lack of a concrete asset, there are times in which the odds of success in trading VIX are eye-catching, making it an (occasionally) attractive arena.

**THE VIX TRADES INVERSELY TO THE S&P**

Although the word volatility generally refers to extreme price movement in any direction, in reference to the VIX and its value, volatility is highly directional. The VIX goes up when stocks drop but it goes down when stocks rise. This is the case even if the stock market is soaring higher at an unusually quick pace. For this reason, traders and investors should look at bullish speculations in the VIX, as being a bearish stance in the equity market, and vice versa. They should not assume that a highly volatile bullish breakout in the S&P will increase the value of the VIX.

**THE VIX, AND MORE SO VIX FUTURES, ERODE WITH TIME**

Newbie traders to VIX futures have been known to opt for going long the VIX as a substitute for purchasing a put option on the e-mini S&P 500. On paper, it appears to be sound logic; unlike a long put option, which exposes traders to the obstacle of time value decay, a futures contract shouldn’t see time value erosion. Yet, in the case of the VIX it does—and it can cause substantial losses to a trading account. Like long options, the VIX often wears away in value every day that lacks conviction selling in the S&P. If you’ve ever bought an option, only to watch the value of it dwindle to nothing while you were waiting for the market to move, you’ve experienced what I’m referring to.
In other words, a trader looking for the equity markets to sell off in the near future might consider buying the VIX as a hedge against their stock portfolio or as a speculative play. However, if we see a week or two of sideways action, the VIX will likely have lost value because traders then adjust their expectations of future volatility to lower levels.

In such an instance, the trader wasn’t necessarily wrong about the direction of the S&P; they simply weren’t immediately right. In the VIX, that is enough to lose money. VIX bulls typically have less capacity for miscue than bulls in other markets might, due to the erosion factor, shown in Figure 51.

![Figure 1: The VIX futures contract erodes over time if the S&P 500 doesn’t decline because, like options, the market generally builds expectations of future volatility into its price.](image)

**The VIX Isn’t a Commodity, But It Has a “Contango”**

*Contango* is a term used frequently but understood rarely. The term is exclusive to the commodity industry and is used to describe the relationship between the cash market of a commodity and the futures market. It is also commonly used to identify a scenario in which the value of futures contracts expiring in the near future are discounted relative to contracts with distant expiration dates. In essence, contango is an environment in which people are willing to pay more for a commodity at some point in the remote future than the actual expected price of the commodity in the proximate future. To clarify, a corn futures contract expiring in March 2016 might be trading near $3.70, but the futures contract representing delivery of the same underlying asset in September 2016 would reasonably be valued at $3.85. In agricultural products such as corn, the price discrepancy is related to the cost to carry such as storage and insurance. However, in the
VIX futures, the contango is due to the uncertainty of human emotions and expectations. As time goes on, uncertainty dissipates.

In most cases, the CBOE’s published VIX value (cash market) for purposes of market analysis is listed at a discount to the front month futures price, which is a tradable asset (and I use that term loosely). Similarly, the next expiring futures month is typically higher than the front month. Because the VIX trades at a contango, if all else remains equal a trader long the VIX will lose money as time goes on because the futures price and the cash market price will converge.

Table 1: The cash market volatility index is generally lower than each of the distantly expiring futures contracts. The farther the expiration date of the futures contract, the higher the VIX value; this is similar to contango in the commodity markets.

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<td>VIX Cash Index</td>
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<td>17.50</td>
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<tr>
<td>February VIX Future (VXG6)</td>
<td>18.20</td>
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<td>March VIX Future (VXH6)</td>
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THE VIX GOES UP QUICKLY AND DOWN SLOWLY

One of the redeeming qualities of the VIX is its capacity to rally sharply but decline slowly. Even more so, there has been a relatively solid floor in the VIX in the low teens (Figure 52). Because of this trait, it can make an attractive speculative play for bottom fishers. If the VIX is hovering near all-time lows, it appears to be a scenario in which the downside risk, albeit significant, is far less than the upside potential. In addition, if you happen to be skilled, or lucky, enough to get in just before a large spike in volatility, it is possible to realize an exceptionally bulky profit in a short period of time. Of course, this alone doesn’t negate the risks discussed previously.
I can’t think of a futures contract that comes with as much heartache and risk as the CBOE’s VIX contract. However, I also can’t think of a futures market that has the type of potential to return abnormally generous returns to those who manage to get on the right side of a trade. It is imperative traders are fully aware of the risk and reward prospects that come with being engaged in VIX trading before getting the idea to buy or sell the futures contract. Unfortunately, inexperienced traders often casually go long or short the VIX without fully understanding the intensity of their position. Before the realization of risk comes to the forefront, the trade might already be thousands of dollars underwater on a single contract. In this section, I’ll focus on the bottom line in VIX trading; how to calculate gains and losses, and an example of the emotional roller coaster that is VIX trading.

VIX FUTURES CONTRACT SPECIFICATIONS

As we know, the VIX futures are traded on the CBOE. This is a significant fact because the CBOE is traditionally an equity product exchange, not a futures exchange. Even so, they own the rights to VIX futures, which trades there nearly 24 hours per day. On weekdays, trading in the VIX begins at 3:30 p.m. Central time and closes at 3:15 p.m. on the following day. There is a 15-minute pause from 3:15 p.m. to 3:30 p.m. to match that of the Chicago Merc’s e-mini S&P 500 futures contract.

Each tick in the VIX is worth $10 to a trader; thus, if the VIX moves from 13.00 to 13.01 a trader has made or lost $10. The minimum tick, or price movement, for this contract is 0.01, but you will rarely see the VIX move in one-tick increments.
The spread between the bid and ask in this market tends to be five ticks ($50), much wider than most futures contracts. Accordingly, prices have a tendency to fluctuate five ticks at a time. Oddly, the wide bid/ask spread isn’t due to a lack of liquidity; VIX futures trade tens of thousands of contracts per day.

Naturally, if the VIX moves from 13.00 to 14.00, traders long the market have picked up $1,000 ($10 x 100) in paper gains, but those short would have an equivalent unrealized loss. A tip for calculating risk and reward in commodities is to always work with a positive figure. Therefore, you will always be subtracting the higher price from the lower price and then multiplying by the tick value (in this case, $10). The result will then be an absolute figure that must then be categorized as a profit or loss. Of course, if you bought the lower price and sold the higher, you made money, and vice versa.

As discussed, the VIX generally trickled down but has the ability to go up quickly. With this in mind, a VIX hovering at, or near, long-term lows can be an attractive place for aggressive traders to speculate. Although the risk is rather large, some view it as being relatively limited while offering seemingly unlimited profit potential.

Because the VIX isn’t a CME product as the e-mini S&P 500 and most other futures contracts are, trading of the futures contract is vastly different. The two most common hiccups new VIX traders experience are the massive bid/ask spreads and accepted order types. For instance, due to liquidity concerns the CBOE doesn’t accept market orders during their designated extended trading hours (3:30 p.m. through 8:30 a.m. Central the following day). In short, VIX traders cannot buy or sell the contract at the market price in the overnight trading session. Instead, they must place limit orders in which they name the price they are willing to buy or sell. This alone isn’t a big deal, but try telling that to a trader attempting to liquidate a trade gone bad, who is receiving rejection notices every time he enters an order to sell his long VIX contract at the market. During my time as a futures broker, I have received plenty of phone calls from panicked clients wondering what was wrong with the trading platform, or the brokerage firm’s order entry server, when in reality the client simply didn’t fully understand the VIX futures contract before endeavoring to trade it.

Similarly, the CBOE doesn’t accept traditional stop-loss orders. This too can quickly trigger a feeling of panic for anyone who has entered a VIX futures contract with a plan in place to implement a stop-loss order to limit risk on the trade. Attempts at placing stop-loss orders are met with rejection notices upon entry of the order. VIX traders can, however, enter stop-limit orders, which is a type of stop order that limits the amount of slippage the trader is willing to take. To refresh your memory, a stop order is one that is placed by a trader to buy a futures contract at a price that is higher than the current, or sell a contract at a price that is lower than the current, should the market reach the stated level. Once the stated stop price becomes part of the bid/ask, the order becomes a market order for immediate execution. Nevertheless, because the CBOE cannot necessarily guarantee their futures market will be liquid enough for stop-loss orders, which become market orders once elected, to produce a fill at a reasonable price, they prohibit the order type. A stop limit, on the other hand, becomes a market order if the stated stop price is reached but only if it is possible to fill the order within the stated limit price. If it isn’t possible, the order simply dies. This can be a nightmare for traders on the wrong side of a
big move because their stop order goes unfilled, leaving them open to unlimited risk. In short, if the exchange is unable to fill a stop-limit order within the trader’s stated parameters, the trader simply does not have a stop-loss order at all and faces the risk of runaway losses. The inability to place a traditional stop-loss order only applies to the VIX and the mini-sized (not e-micro) gold and silver contracts traded on non-CME exchanges, which are more inept at facilitating trading in equity products than futures.

THE BOTTOM LINE ON THE VIX

As discussed, the VIX generally trickled down but has the ability to go up quickly. With this in mind, a VIX hovering at, or near, long-term lows can be an attractive place for aggressive traders to speculate. Although the risk is rather large, some view it as being relatively limited while offering seemingly unlimited profit potential.

*This is an excerpt from Chapter 13 of Higher Probability Commodity Trading written by Carley Garner and published by DeCarley Trading, an imprint of Wyatt-MacKenzie Publishing.

**There is a substantial risk of loss in trading futures and options. It is not suitable for everyone!

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Editor’s note: this article was originally published on January 18, 2017 at Dave’s Observations and is republished with permission.

As a student pilot, one of the most challenging moments early on was getting comfortable with stalls. For those of you that are unfamiliar, a stall is when you basically create the conditions where your wings are unable to provide lift and you start going doing straight down fairly quickly. This happens most often during takeoffs and landings, and as you can guess going straight down in either case is not recommended.

The best way to avoid stalls? Go way up in the air and practice them. The goal being that you become familiar with the sounds and sensations of a stall and get comfortable fixing it immediately so it doesn't become a major problem. The sensation is fairly uncomfortable, sort of a sinking feeling in your stomach as you realize something bad might be happening in the very near future.

So how do you make the plane stall? For a "power-off stall" you basically throttle down to idle and hold the nose up. You start to lose airspeed and eventually the nose drops suddenly as the wings lose the ability to provide lift.

Why bring this up now? Well, your flight path as you enter a stall feels similar to the current chart of the S&P 500. Once you get to the right altitude, you sort of drift sideways to a little up. What comes next? The stall.
Classic bearish divergence from RSI, MACD and stochastics.

So how do you get out of a stall? Easy. Just ease off on the yoke (aka the steering wheel). The Cessna will come out of the stall conditions and back to level flight.

What are you *not* supposed to do? Push forward on the yoke. This puts you in a nose dive. I tried it once, not on purpose. Luckily my flight instructor jumped in and corrected the mistake and I had a fantastic learning experience.

Not anticipating a nose dive here but a nice stall correction feels about right.

*Editor’s note: the following was originally posted on January 31, 2017.*

**Recency Bias Running Rampant with Facebook**

Recency bias is a common behavioral phenomenon where we tend to pay more attention to more recent data. To take a step further, we often assume that whatever has happened recently (for example, a series of up days) will continue to happen.
Take Facebook for example. Since bottoming at year end, 13 out of 17 days the stock closed higher than the previous day. Bright green on your screen, pat yourself on the back, great position. We even had four consecutive strong up closes leading up to last Thursday. Then we have the last two days, with lower closes. Panic! Chart below.

Why does it feel so scary for a solid performer like FB to go down for a couple days? Because of the recency effect. We're primed to expect a good stock to perform well. And we expect that an uptrend will persist. We also hear things like "Tech Stocks Tanking" when they're down 100-200 bps or so.

So how do we deal with the recency effect as investors? Keep an eye on the big picture. The last couple days, the last couple weeks, the last couple months are all small movements within a much larger trend going back to 2012.
Remember that one of the great benefits of technical analysis is to understand the long-term supply and demand picture. Uptrends are a series of higher highs and higher lows. All is well.

See previous post on SPX and stall speed. Plane has now buffeted and the nose is dropping down. Ease off on the yoke!

Dave Keller, CMT, is the former director of research at a large buy-side institution who observes the financial markets through the lens of technical analysis and behavioral finance.
WHY PLAY THE BLOOMBERG TRADEBOOK TRADER BRAIN EXERCISE, AN EXERCISE BASED ON THE WORK OF DENISE SHULL, MA?

Editor’s note: this article was originally published at TheReThinkGroup.net and is reprinted here with permission.

Recently, Bloomberg Tradebook released the Trader Brain Exercise. Developed in collaboration with The ReThink Group, the “game” essentially warms up the parts of the brain involved in pattern recognition and prediction. A leading decision neuroscientist had this to say about it.

The Trader Brain Exercise is the first in what promises to become a unique suite of financial training tools that are designed based on solid scientific analysis of trading skill. To use it is akin to performing the proven exercises that enhance a piano player, a diver, a navy seal, or a pilot. Trading desks will be able to train their members into becoming better traders without risking the company’s money. No longer will trading skill need to be considered “innate” or something that can only be learned on the job. It can be strengthened through exercising.

This article explains more about the science behind the Bloomberg Tradebook Trader Brain Exercise by delving into its background below. (White Paper excerpt republished from TraderBrainExercise.com)

Exploring the Nature of Trader Intuition

In 2010 The Journal of Finance published a startling study by Cal Tech researchers Bruguier, Quartz and Bossaerts. Through brain and behavioral experiments, they demonstrated how social cognition, rather than mathematical and logical reasoning, underlies the otherwise little-understood X-factor in traders. Those legendary portfolio managers and traders who seem to have a special talent for predicting markets unconsciously rely on a dimension of thought known alternately as theory of mind, cognitive empathy or mentalizing. This social thinking style appears to be the power behind that exceptional pattern recognition ability that enables great traders to infer meaning from the signals relayed through the dance of price action.
The researchers first ran an experiment to create virtual market data that included intentional buying and selling (which they somewhat unfortunately termed as “presence of insiders”). Next, they performed brain scans to identify which parts of the brain were active when individuals subsequently viewed the development of price action in this virtual market. In other words, the researchers took pictures of active human brains as they were thinking about price movement and identified which regions and structures were most involved in contemplating the price movement. Last they ran a third experiment which tested for a correlation in the ability to predict price direction with scores on three traditional tests of social cognition and mathematics.

The findings in this complex experimental design include:

1. Subjects were quiet successful (46-78%) at forecasting the direction of price changes.
2. Correct forecasts correlate with two social cognition tests with the strongest evidence being for the classic Heider-Simmel test discussed below and used as a basis for the Bloomberg Tradebook Trader Brain Exercise.
3. The mathematics test results showed no correlation with the ability to predict price.

The Classic Heider-Simmel Experiment of 1944

More than 70 years after Fritz Heider and Marianne Simmel published their now classic study of perception and geographical shapes, their idea remains the most widely referenced investigation of the thinking style known as “theory of mind”. Using only geometric shapes, they determined that almost 100 percent of subjects watching such shapes move impute human meaning and a story to the movements. Even when their shape video played in reverse, all but two of the studies’ subjects reported a detailed story being played out. Or, to use the original language “interpreted the picture as action of animated beings, chiefly of persons”. In essence, Heider and Simmel successfully demonstrated that humans tend to perceive the meaning of others’ intentions even without seeing their faces or associated emotional expressions.

Traders who consistently and correctly predict others’ future needs to buy or sell through observing the behavior of changing numerical symbols reveal the same type of social thinking. In fact, if we think about it, we can see that all a trader or PM actually cares about is “knowing” who will pay more tomorrow for something they are buying today. Price prediction, no matter what form of analysis a market participant might favor, might look like a numbers game but is in fact a people game.
Conscious or Unconscious Mental Processing?

As academics have become better able to explore brain activity through brain images and other advanced techniques, it’s become widely accepted that most of our mental processing occurs below the level of consciousness. The neuroscientist David Eagleman, whose PBS series, The Brain (2015) explores his brain research, stated in his book, Incognito that “most of what we do and think and feel is not under our conscious control. ... The conscious you is the smallest bit of what’s transpiring in your brain.” He continued,

“Brains are in the business of gathering information and steering behavior appropriately. It doesn’t matter whether conscious is involved in the decision making. And most of the time, it’s not.”

Hence, traders for the most part don’t truly recognize consciously that they are predicting other traders’ future perceptions when they predict price. They may realize that they talk about the market in terms of people with statements like “who is pounding this bid?” or “they are coming for them now” but the majority of traders rather blithely accept the widespread misperception that their price predictions stem from some sort of probabilistic thinking. Although they often recognize the similarities between poker and trading, generally the human prediction aspect remains unnoticed or at least severely underappreciated.

Expert Knowledge, Unconscious Pattern Recognition and Trading Intuition

It’s also relatively fashionable to discount the value of unconscious pattern recognition or felt knowledge. Behavioral finance research has convinced us to doubt the type of expert knowledge which we commonly label as intuition. In contrast however, leading scholars in judgment and decision making say things like: “intuitive thinking underlies the most advanced thinking” (Reyna, 2012).

Research points to evidence that more sophisticated thinkers rely on the gist or essence of a situation rather than the literal, verbatim recounting of the factors to make choices. They cull the essence of the questions at hand rather than itemize and prioritize each possible outcome. As such this is what the exercise is aimed at, the basic question of which way price might move as opposed to a more detailed analysis of all of the factors that may be influencing price movement. An expert trader who listens for and parses their internal voice actually accesses their years of watching the dance of price.

The Bottom Line

In summary, engaging with the Bloomberg Tradebook Trader Exercise can reasonably be expected to tap into a trader’s the most useful neuronal “muscles”. Consciously working with the actual skill underlying performance – social cognition – should in effect warm-up the trader’s brain in a way that makes it more facile and effective in anticipating the likely development of price action. We hope you enjoy this exercise and we believe that with practice, it will benefit your trading.
Denise Shull, MA, Decision Coach and Performance Architect, leverages her training in psychological science to solve the challenges of mental mistakes, confidence crises and slumps in Olympic athletes and Wall Street traders. Denise is known for her uncanny effectiveness in coaching, training and assessing for the X factor of human performance under pressure. A former trader and trading desk manager, Shull’s Wall Street career began in 1994 with traders from the Chicago Board Options Exchange. She then ran two equities desks before becoming a member of the Chicago Mercantile Exchange. In 2004, she also began translating neuroeconomics — the new science of the brain and risk — into investing and trading profits at banks, hedge funds and proprietary trading firms. The head of regional trading for a global bank says, “…the work I have done with her has enabled me to make more progress in my trading than my 15 years of experience did on their own.”

Her 2012 book, Market Mind Games, has been described as the “best of its genre” and a “Rosetta Stone of trading psychology”. In 2015, she was invited to consult on Showtime’s drama BILLIONS and in 2016, Bloomberg’s Tradebook delivered their trader brain exercise game based on her work. Shull graduated from Harvard Kennedy’s executive program in “Investment Decisions and Behavioral Finance” in 2009. She holds a Master of Arts in neuroscience (1995) from The University of Chicago. Her thesis research, “The Neurobiology of Freud’s Repetition Compulsion” was published in 2003 in the Annals of Modern Psychoanalysis and was cited in 2013 as one of the earliest groundbreaking papers in the emerging field of neuro-psychoanalysis.
THE UPSIDE BREAKOUT CONFIRMS THE BULL MARKET, NOT WITHSTANDING CORRECTIVE ACTION

BY DAVID TIPPIN AND RON MEISELS

January was the month that the bull market treated itself to a “new all-time high party” in New York. The S&P 500, Dow Industrials and Transports, the NASDAQ, the NYSE Composite and the NYSE daily advance/decline line have all made new all-time highs recently. For good measure, London’s FTSE joined the party in mid-month. And Toronto’s S&P/TSX Composite Index came within 11 points of making its own new high. Weekly charts, which provide a good longer-term perspective, remain unreservedly bullish. Major market indices are well above their rising 200-day Moving Averages and most charts show strong patterns of rising highs and rising lows. Individual sectors and stocks continue a pattern of rotational corrections, with new leadership arising as previous leaders take a rest. “Dow 20,000” may have captured the media’s attention, but it is the NASDAQ that is now showing signs of wanting to take the lead in the bullish advance.

Our “big picture” view of this bull market continues to suggest that we are in Leg-5 of a 5-part advance that started in March 2009. Obviously it is in its early stages, but as it unfolds, to answer some of the questions asked, we are always on the lookout for any signs of a major market top. Tops generally occur in one of two ways: (1) a prolonged period of distribution that sees major behavioral divergences appearing amongst the major market indices and various internal indicators; or more rarely (2) a “blow-off” top that sees market indices and individual stocks soar in a near-vertical fashion on a wave of over-enthusiasm. To date, we see no sign that a bull market-ending top is developing. The major market indices are moving in the same direction and, while market enthusiasm is growing (Barron’s has “DOW 30,000” on its cover), we have yet to see evidence of a buying panic.

Therefore Leg-5 remains in overall good shape. At the same time, our recent Market Comments emphasized that a short-term pullback was possible due to internal technical weaknesses. These issues have not disappeared. New York is approaching some cyclical headwinds. The 70-day cycle matures on February 10, the 39-week cycle at the beginning of March and the 105-day cycle at the end of March. Post-election years in the U.S. also show seasonal weakness in the first quarter.

Our current assessment is that January’s action in the S&P 500 shows some signs of a possible breakout from a consolidation. This will only be confirmed if the Index moves strongly through 2,310 and stays above that level. The jury remains undecided on the validity of a breakout. But downward cyclical forces and technical weaknesses could limit a further advance in the near-term and pull New York back in February and March. The longer-term outlook remains positive.
Toronto continues to track higher towards its all-time high of 15,685 made in September 2014, but Toronto may have to go lower before it achieves a new all-time high. Materials stocks are moving to the fore. Internal momentum is weakening and, as we forecasted two weeks ago, the latest move has increased the negative divergence in internal momentum.

In sum, the S&P 500 needs to extend its advance well into the 2,300s in order to prove that it has truly broken out and that its upside momentum can overcome lingering technical weaknesses. February and March are shaping up as a prolonged slug-fest between bulls and bears. The outcome may be a draw, which in fact would be a victory for the bulls since they remain firmly in the driving seat.

The S&P 500’s prolonged sideways movement ended last week with a “gap up” move to the 2,300 level. There was no immediate follow through to push prices higher, so the longevity and outcome of this move remains in doubt. A negative divergence in internal momentum remains. It would take a sustained move through 2,310 – where upper trend channel resistance lies – to convince us that the S&P 500 is renewing its advance that started in early November.

There is good near-term support from 2,230 to 2,285 and the rising 50-day Moving Average is just under 2,250. Below this support zone the rising 200-day Moving Average sits at about 2,160.

The S&P 500 is very near the top of its trend channel and internal momentum is weak. A pullback towards the middle of this channel at about 2,225 is possible. This would provide a firmer base for a sustained move above 2,300.
The S&P/TSX Composite Index’s action in January consisted of higher highs and higher lows but with declining internal momentum. There is a well-defined trend channel that has contained the action of the S&P/TSX Composite Index for one year and the Index is comfortably in the middle of that channel. Toronto is modestly overbought and very near its all-time high.

Toronto’s most pressing issue is whether the negative divergence in internal momentum is going to undercut the overall up trend. The 14,500 level, with the 200- day Moving Average just above it, remains a good area of support. There is further support all the way up to 15,000 and the lower trend channel line is there.

Toronto could be pulled down, if New York declines in February and/or March. Ideally, the S&P/TSX Composite Index will hold the 15,000 level. Toronto can easily tolerate a 3-4% pullback in the short-term. The outlook is for higher prices as the year progresses, with our Point & Figure target remaining at 16,500.
The Dow Industrials broke above 20,000 last week, clearing near-term resistance. We expected that the Dow Industrials would take a rest as the Index achieved the 20,000 level.

The jury is still out as to whether this is a true breakout or part of a rally. If the Dow Industrials stays above 20,000 and extends the advance, then a breakout is confirmed. But a large divergence in internal momentum arising in January, and the optimism on the cover of Barron’s, suggest that the move above 20,000 is still vulnerable to a pullback. There is good near-term support from 19,650 to 20,000. Below this support band further meaningful support does not arise until 18,700.

The break above 20,000 remains unconvincing until it extends further. With the Dow Industrials stretched well above its 200-day Moving Average, vulnerability to a corrective move is increasing. The bulls will hope that any pullback is contained at the 19,650 level.

Our last look at the FTSE at the beginning of January forecast that a move above 7,150 was likely. The FTSE broke out above its previous high at 7,130 and extended its move to a new high at 7,354 by mid-month. From that point a pullback occurred to re-test the breakout point.

The FTSE is currently oversold and still well above its rising 50-day Moving Average. The challenge now is for London to defend its breakout point at 7,130. A move below 7,130 would likely lead to a larger retracement to a point between the 50-day and 200-day Moving Averages, i.e., between 6,700 and 7,000. The FTSE remains positive above 6,650.

The London market continues to be bullish. If the 7,130 level is successfully defended, then the next major move for the FTSE will be upwards and to challenge the recent high at 7,354.
Ron Meisels is Founder and President of Phases & Cycles Inc. with over 50 years of stock market experience. He specializes in the independent research of Canadian and U.S. securities and market using Behavior Analysis. Institutions ranked him among the top three analysts for six consecutive years (Brendan Wood Survey). He is a frequent guest on the Business News Network (BNN) and is frequently quoted in major financial media such as Barron’s, The Globe & Mail, The National Post, Les Affaires, Bloomberg, Canadian Press, etc. He is the Founder, first President and Honorary Lifetime Member of the Canadian Society of Technical Analysts (CSTA); founding Secretary and past Director of the International Federation of Technical Analysts (IFTA); first Canadian recipient of the A. J. Frost Award; and developer of the “Meisels Index”, an overbought/oversold indicator based on daily closings. It is featured on the Metastock system. To learn more, please visit Phases-Cycles.com.

David Tippin, PhD, has been a contributor to Phases & Cycles since 1995. He has over 20 years of stock market experience and provides a monthly Market Comment.
BITCOIN CRASHES TO A NEW HIGH

BY CHARLIE MORRIS

Editor’s note: This was originally published at AtlasPulse.com.

The price action since the middle of December isn’t something bitcoin traders will forget anytime soon. On the Wednesday before Christmas, the price began to accelerate as it broke above $800 on an unsustainable trajectory. The market peaked 15 days later on the morning of Thursday 5th Jan, at just above $1,150. Some say that was a retest of the all-time high back in December 2013. So far, the 30 day moving average hasn’t been breached on a closing basis, and provided you purchased your bitcoins before Christmas, then life hasn’t changed very much at all.

Bitcoin is maturing. We should be grateful that the spike in volatility has gone from 20% to 75% over the past month. In 2013, it went from 30% to 200%. However critical you want to be about this network, there can be no doubt that it is entering the mainstream. Blockchain.info has seen over 11 million wallets downloaded. Developers are working behind the scenes on applications that will blow your mind. This space is very real indeed.

Although the bitcoin network has just passed its eighth birthday, it has only been trading for about 6 ½ years. Over those 2,343 days, only 21 have seen a close above $930. It stands to reason that the vast majority of bitcoin enthusiasts have done very nicely out of this space. And to put that into perspective, this recent surge/crash/consolidation won’t be remembered for long. Looking at the history, and on a log scale, it’s barely visible.
On volatility cycles, there have been around 12 spikes over the past five years. That equates to every five months or so. I would make a diary note three months away reminding you to get interested again. In the mean-time, stay bullish but restrain your speculative activities in the bitcoin market until things settle down. 1st April sounds like a perfectly respectable date for that!

The day the world comes to understand that digital assets have utility, and are an important part of the evolution of the internet, then this space will be far better understood. In the meantime, we have to accept that this new asset class, with a promising future, is still a naughty puppy. It’s just a matter of time before attitudes change.

After a career as an officer in the Grenadier Guards, Charlie Morris spent 17 years as the Head of Absolute Return at HSBC Global Asset Management, managing more than $3 billion in client funds. Between 2003 and 2015 his fund made a cumulative return of more than 100%. He is widely known and respected for his specialist interest in gold, cryptocurrencies and momentum investing. As well as his Atlas Pulse newsletter, he has made over 200 appearances as a guest expert on financial television programs and was recently appointed the editor of the Fleet Street Letter. To learn more, please email atlaspulse@gmail.com.
CBOE SKEW INDEX TOPS 140 TWIN DAYS IN A ROW, AS DEMAND FOR DISASTER PROTECTION INCREASES

BY MATT MORAN

Editor’s note: this was originally published at the CBOE Blog on January 20, 2017 and is reprinted here as an example of how to less well known risk management too.

Introduction to CBOE SKEW Index ("SKEW")

The crash of October 1987 sensitized investors to the potential for stock market crashes and forever changed their view of S&P 500® returns. Investors now realize that S&P 500 tail risk - the risk of outlier returns two or more standard deviations below the mean - is significantly greater than under a lognormal distribution. The CBOE SKEW Index ("SKEW") is an index derived from the price of S&P 500 tail risk. Similar to VIX®, the price of S&P 500 tail risk is calculated from the prices of S&P 500 out-of-the-money options. SKEW typically ranges from 100 to 150. A SKEW value of 100 means that the perceived distribution of S&P 500 log-returns is normal, and the probability of outlier returns is therefore negligible. As SKEW rises above 100, the left tail of the S&P 500 distribution acquires more weight, and the probabilities of outlier returns become more significant. One can estimate these probabilities from the value of SKEW. Since an increase in perceived tail risk increases the relative demand for low strike puts, increases in SKEW also correspond to an overall steepening of the curve of implied volatilities, familiar to option traders as the "skew".
The CBOE SKEW Index (SKEW) values, which are calculated from weighted strips of out-of-the-money S&P 500 options, generally rise to higher levels as investors become more fearful of a negative equity “black swan” event — an unexpected event of large magnitude and consequence.

Key facts about recent SKEW values –

- TWO DAYS IN A ROW. SKEW closed at 143.43 on January 18, and 141.03 on January 19 (the sixth time in its 27-year history that the index closed above 140 two days in a row);
- HIGHEST IN SIX MONTHS. The January 18 value of 143.43 was the highest since June 2016 (the month of the Brexit election);
- NINTH HIGHEST LEVEL. The January 18 value of 143.43 was the ninth highest level for SKEW in more than 6,800 days of price history dating back to January 1990.
- HIGHER IN RECENT YEARS. The average value of SKEW (since the beginning of its data history in 1990) has been 118.4. Prior to 2014, the highest average daily closing value in any year for the SKEW Index was 122.5, but in each of the years 2014, 2015, 2016, and year-to-date 2017, the average daily closing level for the SKEW Index was 127.5 or higher.

CHARTS ON CBOE SKEW INDEX

Since June 2016 SKEW topped 140 on three days – November 3, and January 18 and 19.
MORE ON SKEW

The value of SKEW increases with the markets anticipated tail risk of S&P 500 returns. If there were no tail risk expectations, SKEW would be equal to 100.

The FAQ on the SKEW Index notes that –

“The price of S&P 500 skewness is inconvenient to use directly as an index because it is typically a small negative number, for example -0.8, -2.3, or -4.3. SKEW converts this price as follows: SKEW = 100 – 10 * price of skewness. With this definition, a price of -2.1 translates to a SKEW value of 121. S&P 500 options with 30 days to expiration are generally unavailable. SKEW is therefore interpolated from two “SKEW” values at the maturities of nearby and second nearby options with at least 8 days left to expiration.”

LIVEVOL SKEW CHART FOR SPX OPTIONS

The SPX volatility skew chart with estimates from Livevol shows that some of the out-of-the-money SPX put options with a 2050 strike price and January 2017 expirations had estimated implied volatilities of 25 or more.
Everyone knows certain things about investing. We all know large returns require accepting larger than average risk. We also know emotions are the enemy of returns and allowing emotions to drive decisions will result in large losses. To avoid these problems, we know that diversification will help reduce risk and is the best strategy for most investors because today’s markets are more efficient and offer fewer opportunities than markets of the past.

In *The Global Macro Edge*, John Netto explains why each of these widely held beliefs is a myth. Should readers believe him? Netto is committed to letting data drive his decisions. He provides readers with the data to demonstrate he understands the investment process. He used the methods described in the book to generate $3.1 million in profits after starting with a $100,000 account in only six years.

Risk is, in fact, central to returns, but successful investors need to accept smarter risks rather than take greater risks in pursuit of gains. The key, as Netto demonstrates, is to maximize return per unit of risk. This concept is fully explained and new indicators are developed to allow readers to quantify their potential return per unit of risk. One of the indicators, the Netto Number, is straightforward and can be implemented in any software package. Other indicators can also be programmed into any software but the Netto Number may be unique among indicators.

The Netto Number has a number of applications. It can help identify the best trading candidates in terms of potential risks and rewards (returns per unit of risk). It could be incorporated into a trading system. It could also serve as the basis of compensation for investment managers. For new investment managers considering starting a hedge fund, Netto’s views on compensation (paying managers for maximizing returns per unit of risk) could provide a competitive edge. Investors may find the idea of paying for returns in context more appealing than a standard “2 and 20” model or something similar. The book provides an outline in how to incorporate this into a business model and how this can be developed into a selling point for potential investors.

That concept alone is reason enough for market pros to read the book. For individuals, there are even more benefits to reading the book.
Many individuals attempt to trade without knowing what trading really is. They understand a few indicators and chart patterns and they open an account at a discount broker. Then they wait for the market to open and start buying and selling. Needless to say, this is rarely enough to generate wealth. Netto explains what trading is by detailing what he really does every day. It’s a look behind the curtain of a trader who reveals what he reads every day, how he trades, how he talks to other traders and even how to make money by having dinner with friends (as long as they are the right friends).

*The Global Macro Edge* will leave readers knowing how to be a macro trader and what is required to succeed. It’s a formula for success for those willing to accept that experience is the best teacher and who understand that Netto’s experience is worth duplicating.

John Netto is a cross-asset class trader and the creator of the Netto Number, the Risk Factor Compensation System, and the Protean Strategy. Netto is an expert in developing, executing, and managing proprietary algorithmic and discretionary trading strategies across a range of time horizons, asset classes, and market regimes. Mr. Netto is also the author of *One Shot - One Kill Trading*. Mr. Netto’s ability to convey esoteric concepts was put on display when he was featured in two documentary movies, *Life on the Line* and *Ghost Exchange*, where he simplified to viewers some of complex aspects of creating a point spread model on The Super Bowl and executing high frequency trading strategies. Netto served in the United States Marine Corps for over eight years and is passionate about Veterans’ causes.
FOREIGN EXCHANGE – LONG SEK

BY NEIL AZOUS

Editor’s note: This was originally published in Sight Beyond Sight on January 2, 2017 and is reprinted here with permission as an example of actionable macro-analysis. To learn more, please visit Sight Beyond Sight.

We are focused on one currency to begin 2017 – the Swedish krona (SEK).

Before the last Riksbank meeting on December 21st, the Finance Minister, Financial Supervisory Authority (FSA), and National Institute of Economic Research (NEIR) all questioned whether the timeframe for reaching the Country’s inflation target should be “relaxed.” Even Parliament is now reviewing the mandate of the Riksbank.

More importantly, at the meeting, three members dissented from any further extraordinary policy, while a compromise was reached to slow the pace of monthly asset purchases. While not a consensus view just yet there is an argument that this meeting marked the end of the easing cycle, or at least the market has entered a new phase.

Consistent with these developments the trade-weighted Swedish krona appears to have finally bottomed out on a chart.

We maintain the following:

- Sweden’s monetary policy has contributed to economic recovery and stable long-term inflation expectations.
- The point has been reached where any additional easing would be considered a policy error.
- The ECB has arguably also ended its easing cycle with its reduction in monthly asset purchases at its December meeting. The Riksbank closely matches its own policy to that of the ECB’s.
- Swedish interest rates are the wrong level as the economy has outperformed the rest of the world. We expect this to show in a higher term premium priced into longer maturity forward interest rates. Higher global bond yields, led by the US, will likely contribute to this development.
  - Today’s Release: Sweden PMI 60.1 vs. 57.3 expected; highest level since Feb 2011
Sidebar: Sweden PMI is usually a good leading indicator for the global industrial business cycle. (Source: Nordea Markets)

- The krona is poised to benefit if the Riksbank normalizes policy or if higher prospective returns on capital lure foreign investment back into Sweden. Given the expectation that cyclicals will outperform on global economic recovery, we expect capital to migrate here as Sweden is the ultimate proxy for cyclicity.
- The Paul Krugman-types that bullied the Riksbank got what they wanted – another housing bubble. To counteract bubble risk, easy policy should be curtailed sooner than what the market is now pricing in.

Sadly, on account of not holding risk into the end of the year in the tracking portfolio, we missed out on the initial entry point following the Riksbank meeting. That said, we expect the TWI SEK to outperform on a total return basis this year, and we will watch closely for an entry point that is acceptable from a reward-to-risk standpoint.

Neil Azous is the Founder and Managing Member of Rareview Macro, a Stamford, CT-based independent research. Neil is also the Editor-in-Chief of Sight Beyond Sight®, a daily financial publication focused on global macro investing. Neil has two decades of experience across the financial markets and is recognized as a thought leader in global macro investing. Prior to founding Rareview Macro, Neil was a Managing Director at Navigate Advisors where he specialized in constructing portfolios and advising on risk. On Wall Street, his career included roles at UBS Investment Bank and Donaldson Lufkin & Jenrette, where his responsibilities comprised of trading derivatives, hedging solutions, asset allocation and fundamental securities analysis. He began his career at Goldman Sachs in Fixed Income, after completing both the firm’s Analyst and Associate training programs, widely acknowledged as the preeminent and most coveted learning ground for undergraduate and graduate students. Neil completed graduate level coursework for a MS in Real Estate at New York University and received his BA in Business Administration from the University of Washington, where he is a member of the University of Washington Bothell Board of Advisors and was the recipient of the Bothell Business School 2013 Distinguished Undergraduate Alumnus Award. He is active in various charity and community organizations. He can reached through his web site.
In *Relationship Investing: Stock Market Therapy for Your Money*, Jeffrey S. Weiss, CMT, takes a nontechnical look at technical analysis. He explains the stock market in terms usually used to understand personal relationships. This is done to make the market understandable to anyone. Technical analysts will recognize all of the important principles about their discipline, but analysts less familiar with the field will gain insights that may have been difficult to grasp in the past.

Jeff learned the value of technical analysis in his youth, when a broker presented him with a choice of either fundamental or technical market analysis. He offered Jeff a stack of thick annual reports, or a far thinner chart book containing several hundred names. Fearing hernia surgery if he attempted to carry home all those annual reports, he opted for the chart book and immediately saw the value of technical analysis.

The book explains what Jeff realized before he was out of his teens. Investors are buying stocks, not companies, and it is far more useful to analyze the stock rather than the company since the investor generates a gain or loss based on the stock’s price – and only that price. Period. The stock can best be understood with technical analysis and technical analysis, Jeff believes, is similar to a relationship. As he explains,

“I have always believed that you must treat your investments in the stock market as you would treat a personal relationship...For example, if a couple is dating for a period of time and their relationship sours to the point where they can’t stand one another anymore, are they going to get engaged, marry, buy a house, and have kids together? Of course not! The relationship would be severed immediately. But what like such a clear-cut choice in life is often far murkier when it comes to investing in the stock market.”
According to Jeff, “In the stock market as in life, a deteriorating relationship (i.e., portfolio problems and marital difficulties) can lead to a determined effort to deny that a problem exists. Investment wise, investors may increase their positions as their stocks fall (“average down”), or insist that they are long-term investors and aren’t concerned about short-term declines, or tell themselves the loss is only “on paper” and unless they sell they don’t really have a loss, or that the shares will come back. A relationship equivalent might be when an unhappy couple stays together on the grounds that they’ve already been with another so long. In a nutshell – excuses. In the stock market as in life, however, not all endings are happy ones, and you need to face that reality. And not dealing with a poor or worsening situation only assures its continuance.”

While investors try to make their relationship work with losing stocks, they often sell winners. In Jeff’s opinion, this is like breaking up with someone whose company you thoroughly enjoy in order to become more deeply involved with someone who has questionable credentials.

Other lessons in the book include experience from bear markets. Jeff remembers not just the more recent bears of the 21st century but also 1973-1974. He learned then that most important consideration in investing should be how well you protect yourself on the downside when the market moves against you. Using the relationship theory of investing, Jeff’s advice is to preserve what you have before trying to get more.

The stories Jeff uses to make his points about the market are entertaining and educational. They will help those who aren’t familiar with markets understand how to invest with more confidence and a focus on safety. They will also help those who have a great deal of experience in the markets. The book offers a new way of thinking about investing and that could be beneficial to many who struggle to obtain consistent profitability. Jeff also includes detailed descriptions of what he has learned in the markets over almost 40 years and a description of his analysis process. This could be helpful to new analysts, struggling to create a structured routine from the chaotic nature of the markets. Experienced analysts could spot a way to improve their own process.

While anyone can benefit from reading Relationship Investing, it could also be a tool for financial advisers looking for effective ways to communicate with prospective clients. Distilling the market into relationship terms could help clients understand the markets and the value of a relationship with their adviser at the same time. The book also offers a different way to reach clients, and clients are likely to gain more value from this book than they would from a presentation made over a chicken dinner.

Jeff Weiss, CMT, has been active in the financial markets since the 1970’s. He currently serves as Chief Technical Analyst at Clearview Trading Advisors, Inc. in New York City, and is scheduled to appear on an upcoming MTA webcast in late-April. It was in 1982 that legendary technical analyst Newton Zinder gave him his big break at E.F. Hutton and Company, and since then he’s served as chief technical analyst for major wire houses including Lehman Brothers, PaineWebber, and
UBS, Inc. Jeff is a frequent guest on financial news programs and has spoken to audiences of professionals, individual investors and students across the country. But in writing Relationship Investing, Jeff reached out to a far broader audience than his immediate one - breaking down the discipline of technical analysis into its non-technical components by using life’s relationships like marriage, dating, separation and the like - something all investors can relate to – as the common denominator to illustrate his points. This is an attempt to simplify what the investor often perceives as an incomprehensible medley of data and decision-making options into an investment roadmap for all seasons. It also strives to provide the reader with a key investment ingredient - direction. Equally important, this book will alert investors, at long last, to the dozens of stock market investment axioms still in use today that have the potential to prove toxic to their stock market performance and financial well-being. It will challenge conventional Wall Street wisdom. The book is less about capital appreciation than about capital preservation, and how to apply the principles thereof toward a potentially improved investment outcome. Jeff’s motto: NEVER tell anyone to do something with their money that you would not do with your own.
DO STOCKS OUTPERFORM TREASURY BILLS?

BY HENDRIK BESSEMBINDER

Editor’s note: This is a brief extract of a research paper that can be downloaded from SSRN.com.

Abstract: Most common stocks do not outperform Treasury Bills. Fifty eight percent of common stocks have holding period returns less than those on one-month Treasuries over their full lifetimes on CRSP. When stated in terms of lifetime dollar wealth creation, the entire gain in the U.S. stock market since 1926 is attributable to the best-performing four percent of listed stocks. These results highlight the important role of positive skewness in the cross-sectional distribution of stock returns. The skewness in long-horizon returns reflects both that monthly returns are positively skewed and the fact that compounding returns over multiple periods itself induces positive skewness. The results also help to explain why active strategies, which tend to be poorly diversified, most often underperform.

I. Introduction

The question posed in the title of this paper may seem nonsensical. The fact that stock markets provide long term returns that exceed the returns provided by low risk investments such as government obligations has been extensively documented, for the U.S. stock market as well as for many other countries. In fact, the degree to which stock markets outperform low risk investments is so large that the magnitude of the observed stock market return premium is widely referred to as the “equity premium puzzle.” These conclusions are most frequently based on market returns that are constructed as capitalization-weighted averages of returns to individual securities. Those studies that consider equal-weighted average returns generally report even higher stock market performance.

This paper relies on the CRSP monthly stock return database, which contains all common stocks listed on the NYSE, Amex, and NASDAQ exchanges, to document that most common stocks provide returns that fall short of those earned on one-month Treasury Bills. Of all monthly common stock returns contained in the CRSP database from 1926 to 2015, only 47.7% are larger than the one-month Treasury rate. In fact, less than half of monthly CRSP common stock returns are positive. When focusing on lifetime returns (from the beginning of sample or first appearance in CRSP through the end of sample or delisting from CRSP, and including delisting returns when appropriate), just 42.1% of common stocks have a holding

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1 See, for example, the evidence compiled in chapter 10 of Corporate Finance, by Stephen Ross, Randolph Westerfield, and Jeffrey Jaffe, McGraw-Hill Irwin, 2013.

2 Mehra and Prescott (1984) first drew attention to the magnitude of the equity premium for the broad U.S. stock market. Dozens of papers have since sought to explain the premium.
period return that exceeds the return to holding one-month Treasury Bills over the same horizon, and more than half deliver negative lifetime returns.

Individual common stocks tend to have rather short lives. The median time that a stock is listed on the CRSP database between 1926 and 2015 is just over seven years. To assess whether individual stocks generate positive returns over the full ninety years of available CRSP data, I conduct bootstrap simulations. In particular, I assess the likelihood that a strategy that holds one stock selected at random during each month from 1926 to 2015 would have generated a 90-year holding period return (ignoring any transaction costs) that exceeds various benchmarks. In light of the well-documented small-firm effect (whereby smaller firms earn higher average returns than large, as originally documented by Banz, 1980) it might be been anticipated that individual stocks would tend to outperform the value-weighted market. In fact, repeating the random selection process many times, I find that the single stock strategy underperformed the value-weighted market in ninety six percent of the simulations, and underperformed the equal-weighed market in ninety nine percent of the simulations.3 The probability that such a single-stock strategy would have outperformed the one-month Treasury bill over the 1926 to 2015 period was only twenty eight percent.

The fact that the overall stock market generates puzzling high long term returns while the majority of individual stocks fail to even match T-bills can be attributed to the fact that the cross-sectional distribution of stock returns is positively skewed.4 Simply put, large positive returns stocks, consistent with an investor preference for skewness as implied by Kraus and Litzenberger are more frequent than large negative returns. The importance of positive skewness in the cross-sectional return distribution increases for longer holding periods, due to the effects of compounding.

Perhaps the most striking illustration of the importance of individual stock skewness to stock market performance arises when measuring aggregate stock market wealth creation. I calculate that the approximately 26,000 stocks that have appeared in the CRSP database since 1926 are collectively responsible for lifetime shareholder wealth creation of nearly $32 trillion dollars. However, the eighty six top-performing stocks, less than one third of one percent of the total, collectively account for over half of the wealth creation. The 1,000 top performing stocks, less than four percent of the total, account for all of the wealth creation. That is, the other ninety six percent of stocks that have appeared on CRSP collectively generated lifetime dollar returns that only match the one-month Treasury bill.

3 The equal-weighted market return exceeds the value-weighted return over long time periods, and thus provides a higher hurdle, both because of the small firm effect (and because of the active rebalancing implicit in equal weighting. For discussion, see Asparhouva, Bessembinder, and Kalcheva (2013).

4 That individual stock returns are positively skewed, and that return skewness declines as portfolios are diversified, has been recognized at least since Simkowitz and Beedles (1978). Numerous authors have assessed the cross-sectional relation between mean returns and skewness (either individual stocks return skewness or the co-skewness of stock returns with the broader market, generally reporting lower returns for more highly skewed stocks, consistent with an investor preference for skewness as implied by Kraus and Litzenberger (1976). See for example Harvey and Siddique (2000), Mitton and Vorkink (2007), Conrad, Dittmar and Ghysels (2013) and Amaya, Christoffersen, Jacobs, and Vasquez (2015).
These results challenge the notion that individual stocks most often generate a positive return premium. The results highlight the importance of skewness in the cross-sectional distribution of stock returns. As I show below, this skewness arises both from the fact that monthly returns are positively skewed and from the possibly underappreciated fact that compounding introduces skewness into the multi-period return distribution even if single period returns are symmetric. At the same time, the results reinforce the importance of portfolio diversification, but from a perspective that differs from the typical textbook presentation. It of course remains true that diversification reduces the variance of portfolio returns, but this study highlights that non-diversified stock investments are subject to the very real risk that they will fail to include the relatively few stocks that, ex post, generate very large cumulative returns. The results therefore help to understand why most active strategies, which tend to be poorly diversified, lead to underperformance.

These results complement recent time series evidence regarding the stock market risk premium. Savor and Wilson (2013) show that approximately sixty percent of the cumulative stock market return premium accrues on the relatively few days where macroeconomic announcements are made. Lucca and Moench (2015) show that half of the equity premium in U.S. markets since 1980 accrues on the day before Federal Reserve Open Market Committee (FOMC) meetings. Related, Cieslak, Morse, and Vissing-Jorgensen (2016) document that the entire equity premium since 1994 has accrued in even weeks after FOMC meetings. Those papers demonstrate the importance of not being out of the market at key points in time, while the results here show the importance of not omitting key stocks from investment portfolios.
Figure 1: Frequency Distributions of Holding Period Returns.

Displayed are frequencies of holding period returns, to a maximum of 500%. The data includes all CRSP common stocks from 1926 to 2015. In cases where stocks list or delist with a calendar period the return is computed for portion of the period where data is available.
Figures 2A and 2B. Cumulative Percentages of Stock Market Wealth Creation.

The figures display the cumulative percentage of U.S. stock market wealth creation since 1926 and measured as of the end of 2015 attributable to individual stocks, when stocks are sorted from largest to smallest wealth creation. Figure 2A includes all 25,782 CRSP stocks, while Figure 2B includes only the 250 largest wealth creating stocks.

Figure 2A: Cumulative Percent Wealth Creation, All Stocks

Figure 2B: Cumulative Percent Wealth Creation, Top 1000 stocks
Table 4: Lifetime Wealth Creation

This table reports lifetime wealth creation to shareholders in aggregate, as measured by text equation (3) based excess returns and prior-period market capitalization. Also reported is the lifetime gross holding period return from first appearance on CRSP to last, and the lifetime geometric mean excess return, measured as the geometric mean of lifetime monthly returns in excess of the geometric mean Treasury Bill return over the same life. Includes the 30 best performing stocks from all CRSP common stock returns from July 1926 to December 2015.

<table>
<thead>
<tr>
<th>Permno</th>
<th>Name</th>
<th>Lifetime Dollar Wealth Creation (Millions)</th>
<th>Lifetime Gross Holding Return</th>
<th>Geometric Mean Excess Monthly Return</th>
<th>Life (Months)</th>
<th>Cumulative Percent of Market Wealth Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>11850</td>
<td>EXXON MOBIL CORP</td>
<td>939,831</td>
<td>22,584.7</td>
<td>0.66%</td>
<td>1073</td>
<td>2.96%</td>
</tr>
<tr>
<td>14593</td>
<td>APPLE INC</td>
<td>677,411</td>
<td>202.5</td>
<td>0.91%</td>
<td>420</td>
<td>5.09%</td>
</tr>
<tr>
<td>12060</td>
<td>GENERAL ELECTRIC CO</td>
<td>597,545</td>
<td>9,221.7</td>
<td>0.57%</td>
<td>1073</td>
<td>6.96%</td>
</tr>
<tr>
<td>10107</td>
<td>MICROSOFT CORP</td>
<td>567,701</td>
<td>834.4</td>
<td>1.62%</td>
<td>357</td>
<td>8.75%</td>
</tr>
<tr>
<td>12490</td>
<td>INTERNATIONAL BUSINESS MACHS C</td>
<td>487,384</td>
<td>94,564.1</td>
<td>0.79%</td>
<td>1073</td>
<td>10.28%</td>
</tr>
<tr>
<td>13901</td>
<td>ALTRIA GROUP INC</td>
<td>448,051</td>
<td>2,029,630.4</td>
<td>1.08%</td>
<td>1073</td>
<td>11.69%</td>
</tr>
<tr>
<td>12079</td>
<td>GENERAL MOTORS CORP</td>
<td>394,132</td>
<td>59.0</td>
<td>0.11%</td>
<td>995</td>
<td>12.93%</td>
</tr>
<tr>
<td>22111</td>
<td>JOHNSON &amp; JOHNSON</td>
<td>383,702</td>
<td>29,306.7</td>
<td>0.88%</td>
<td>855</td>
<td>14.14%</td>
</tr>
<tr>
<td>55976</td>
<td>WAL MART STORES INC</td>
<td>337,738</td>
<td>1,495.4</td>
<td>1.02%</td>
<td>517</td>
<td>15.20%</td>
</tr>
<tr>
<td>18163</td>
<td>PROCTOR &amp; GAMBLE CO</td>
<td>335,811</td>
<td>5,377.0</td>
<td>0.55%</td>
<td>1036</td>
<td>16.26%</td>
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<tr>
<td>14541</td>
<td>CHEVRON CORP NEW</td>
<td>330,406</td>
<td>9,454.3</td>
<td>0.58%</td>
<td>1073</td>
<td>17.29%</td>
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<tr>
<td>11308</td>
<td>COCA COLA CO</td>
<td>326,990</td>
<td>66,634.0</td>
<td>0.76%</td>
<td>1073</td>
<td>18.32%</td>
</tr>
<tr>
<td>10401</td>
<td>A T &amp; T CORP</td>
<td>302,550</td>
<td>393.5</td>
<td>0.32%</td>
<td>952</td>
<td>19.27%</td>
</tr>
<tr>
<td>84788</td>
<td>AMAZON COM INC</td>
<td>300,228</td>
<td>450.6</td>
<td>2.60%</td>
<td>223</td>
<td>20.22%</td>
</tr>
<tr>
<td>11703</td>
<td>DU PONT E I DE NEMOURS</td>
<td>299,497</td>
<td>7,919.8</td>
<td>0.56%</td>
<td>1073</td>
<td>21.16%</td>
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<tr>
<td>90319</td>
<td>ALPHABET INC</td>
<td>276,539</td>
<td>15.2</td>
<td>1.91%</td>
<td>136</td>
<td>22.03%</td>
</tr>
<tr>
<td>22752</td>
<td>MERCX &amp; CO INC NEW</td>
<td>265,694</td>
<td>7,917.8</td>
<td>0.74%</td>
<td>835</td>
<td>22.87%</td>
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<tr>
<td>38703</td>
<td>WELLS FARGO &amp; CO NEW</td>
<td>250,843</td>
<td>797.0</td>
<td>0.66%</td>
<td>636</td>
<td>23.65%</td>
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<tr>
<td>59328</td>
<td>INTEL CORP</td>
<td>246,030</td>
<td>1,195.9</td>
<td>0.98%</td>
<td>516</td>
<td>24.43%</td>
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<tr>
<td>66181</td>
<td>HOME DEPOT INC</td>
<td>225,150</td>
<td>5,239.9</td>
<td>1.77%</td>
<td>411</td>
<td>25.14%</td>
</tr>
<tr>
<td>13856</td>
<td>PEPSICO INC</td>
<td>213,920</td>
<td>42,284.4</td>
<td>0.72%</td>
<td>1073</td>
<td>25.81%</td>
</tr>
<tr>
<td>17778</td>
<td>BERKSHIRE HATHAWAY INC</td>
<td>209,839</td>
<td>2,908.8</td>
<td>1.33%</td>
<td>470</td>
<td>26.47%</td>
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<tr>
<td>10104</td>
<td>ORACLE CORP</td>
<td>203,726</td>
<td>607.5</td>
<td>1.53%</td>
<td>357</td>
<td>27.11%</td>
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<tr>
<td>15966</td>
<td>MOBIL CORP</td>
<td>202,573</td>
<td>2,795.5</td>
<td>0.60%</td>
<td>875</td>
<td>27.75%</td>
</tr>
<tr>
<td>26403</td>
<td>DISNEY WALT CO</td>
<td>192,834</td>
<td>8,115.2</td>
<td>0.92%</td>
<td>697</td>
<td>28.35%</td>
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<tr>
<td>20482</td>
<td>ABBOTT LABORATORIES</td>
<td>189,642</td>
<td>28,206.7</td>
<td>0.79%</td>
<td>945</td>
<td>28.95%</td>
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<tr>
<td>22592</td>
<td>3M CO</td>
<td>180,706</td>
<td>7,492.6</td>
<td>0.73%</td>
<td>839</td>
<td>29.52%</td>
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<tr>
<td>19393</td>
<td>BRISTOL MYERS SQUIBB CO</td>
<td>177,167</td>
<td>34,848.4</td>
<td>0.78%</td>
<td>987</td>
<td>30.07%</td>
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<tr>
<td>43449</td>
<td>MCDONALDS CORP</td>
<td>172,186</td>
<td>3,709.3</td>
<td>0.99%</td>
<td>593</td>
<td>30.62%</td>
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<tr>
<td>21936</td>
<td>PFIZER INC</td>
<td>171,584</td>
<td>25,886.5</td>
<td>0.86%</td>
<td>863</td>
<td>31.16%</td>
</tr>
</tbody>
</table>