LETTER FROM THE EDITOR

We are starting this month’s newsletter with an article that challenges the traditional models used to explain market prices. Dr. Ben Hunt argues that just as the heliocentric model of the solar system replaced a geocentric model over time, long-held beliefs about markets need to be reexamined and updated to reflect new knowledge. Fortunately, Dr. Hunt points out that there is a market theory which lays the groundwork for a new understanding of market:

“Technical analysis is, at its heart, behavioral analysis, and as such is prime real estate to build a new investment paradigm that incorporates game theoretic behaviors.”

This is a thought-provoking piece that is followed by a practical example of how the MTA Educational Foundation is working to further this goal. We then have practical examples of how the theory of technical analysis is applied in the real world.

I hope you are a part of the theoretical and practical changes that are occurring in the financial community. If you would like to share your thoughts on those changes, please email us at editor@mta.org.

Michael Carr
THE MUSIC OF THE SPHERES AND THE ALCHEMY OF FINANCE
BY W. BEN HUNT, PH.D.

“You say that we go round the sun. If we went round the moon it would not make a pennyworth of difference to me or to my work.” – Sherlock Holmes (from “A Study in Scarlet” by Arthur Conan Doyle)

“It doesn’t matter if the cat is black or white, as long as it catches mice.” – Deng Xiaoping

“I could float off this floor like a soap bubble if I wish to. I do not wish to, because the Party does not wish it. You must get rid of those nineteenth-century ideas about the laws of Nature. We make the laws of Nature.” – O’Brien (from “1984” by George Orwell)

A few million years ago – the blink of an eye in evolutionary terms – our ancestors were roaming around some African savannah in a small band. We are still that social hunter-gatherer, for better or worse, with all the advantages and disadvantages our evolutionary heritage provides. Advantages include opposable thumbs, big eyes, and lots of neurons devoted to pattern recognition – attributes that, among other things, make our species very competent at driving cars and playing video games. Disadvantages include relatively few neurons and no sensory organs for interpreting really large numbers or physical laws that are foreign to an African savannah – attributes that, among other things, make our species poor theoretical astronomers.

We are excellent observers and pattern recognizers. For thousands of years, no astronomical event visible to the naked eye, no matter how minor, has escaped our attention and overwhelming need to find its pattern. But if understanding why these celestial patterns occur as they do requires a belief that the sun is an incomprehensibly large ball of hydrogen plasma 96 million miles away that warps the time/space continuum with its gravitational force. That being said, it’s pretty easy to understand why a heliocentric theory wasn’t humanity’s first choice.

For thousands of years, then, Common Knowledge – what everyone knows that everyone knows – of humanity’s place in the universe was dominated by this geocentric view, supported in the distant past by various origin myths and since 384 BC and the birth of Aristotle by the Narrative of Classical Science. Like all successful Narratives, Classical Science and Aristotelian geocentrism had a ring of truth to it (“truthiness”, as Stephen Colbert would say) and worked in concert with the interests of the most powerful political and economic entities of the day, from the Alexandrian Empire to the pre-Reformation Catholic Church. For almost 2,000 years the status quo entities of the West – whether explicitly religious such as the Catholic Church or dynastic and quasi-religious such as the Rashidun Caliphate, the Byzantine Empire, and the Holy Roman Empire – were based on a geocentric origin myth. The Narrative of Classical Science was extremely useful in efforts to maintain this myth because it allowed these political institutions to present geocentrism within the “modern” and compelling framework of Greek culture and learning, as opposed to the
rather grim and ancient oral traditions of a nomadic desert tribe. Charlemagne may have famously used the sword to convert entire tribes to Christianity, but over a longer period of time Aristotle proved even more effective.

Unfortunately, however, there was a problem with the Aristotelian geocentric view of all the heavenly bodies circling the Earth in unison, creating a perfect and timeless “music of the spheres” – the data didn’t fit the theory. Mars, for example, goes back and forth in the sky with a retrograde motion during certain periods of the year, as do all of the planets to one degree or another, as opposed to a steady sweep across the sky as would be the case with a regular orbit around the Earth. Why? Because in truth both Earth and Mars go around the sun, and since Earth’s orbit is inside that of Mars, the position of Mars relative to Earth takes on a retrograde pattern when seen from Earth.

Fortunately for the Narrative of Classical Science, however, around 140 AD an Alexandrian Greek named Claudius Ptolemy figured out how to reconcile the observed astronomical patterns with Aristotelian theory by devising the notion of “epicycles” and “deferent points”.

In the Ptolemaic system, planets do not orbit around the Earth directly. Instead, they orbit around a point in space (the epicycle center) that orbits around another point in space right next to Earth (the deferent center). The result is a flower-like orbit around the Earth for every planet, generating periods of retrograde movement as seen from the Earth.
If you ever had a Spirograph as a child, you’ll immediately understand Ptolemy’s theory. Basically he re-conceptualized the solar system as a giant, complex Spirograph, and through that brilliant insight the Narrative of Classical Science was saved.

Almost all of the observed data fit the Ptolemaic model well, and the theory was effective at predicting future astronomical events like eclipses and transits. Not perfect, but effective. For more than 1,000 years after his death in 168 AD, Ptolemy was the first and last word in everything to do with astronomy and astrology in both the Christian and Islamic worlds. Now that’s a useful Narrative!

So what went wrong with the Spirograph model of the universe? In school we learn that Copernicus “discovered” the heliocentric theory of the solar system and published a book to that effect in 1543, thus launching the Copernican Revolution. The popular implication is that it was the strength of the new ideas themselves that won the day for Truth and Reason against the narrow-minded intellectual tyranny of the Church. Yeah, right. In fact, it wasn’t until 60 years after Copernicus died that the Church got around to condemning his book and his theory. It took that long for his ideas to become dangerous to Rome because it took that long for his ideas to become useful to political and economic entities in Northern Europe. It also took that long because the world had to wait for Kepler and Galileo to improve on Copernicus so that his theory fit the observed data more comprehensively and more effectively than Ptolemy.

I want to focus on that last point for a minute. The original heliocentric model that Copernicus developed was a lot simpler than the Ptolemaic model, but it didn’t work very well ... if you wanted to predict an eclipse or the date that Easter would occur in some future year, you were still better off using the good old Ptolemaic tables. To make the observed data fit his model, Copernicus ultimately had to take the same Spirograph approach that Ptolemy had used 1,400 years earlier, complicating his original ideas enormously by introducing epicycles and the like. The problem for Copernicus was that he was hooked on the idea of circular orbits. It wasn’t until Kepler modified the heliocentric model with the idea of elliptical planetary orbits in 1615 that everything fell into place with a single simple theoretical structure. And it wasn’t until Galileo made his telescopic observations of the phases of Venus in 1610 that the Copernican model accounted for observed facts that the geocentric model could not possibly support.

In the history of Ptolemy and Copernicus we see the three necessary and sufficient conditions for a “paradigm shift”, which is just another term for an abrupt change in the Common Knowledge surrounding some socially-constructed phenomenon:
1) new data observations that fit the new paradigm better than the old paradigm;
2) new ideas that create a simpler and more fundamental structure for the new paradigm relative to the old paradigm;
3) political and economic entities that come to see their self-interests better supported by the new paradigm than by the old paradigm.

I think it’s possible that we are on the cusp of just such a paradigm shift within the investment world, away from a narrow-minded faith in the power of Modern Portfolio Theory and its econometric foundations, and towards a more inclusive view of markets that incorporates an appreciation of historically-conditioned behavior as well as patterns of strategic decision-making under uncertainty.

Maybe that’s just wishful thinking on my part, but the necessary and sufficient conditions for change are present, including the realization by powerful political and economic entities that the current system … well, it just is not working. Structural changes in markets (see “How Gold Lost Its Luster”) are eroding business models left and right. The collapse in trading volumes is poison to anyone who worships at the altar of Flow, like bulge bracket sell-side firms. Likewise, rampant disintermediation is death to gatekeepers like fund-of-funds and consultants. Is your view on whether to buy or sell Apple really going to be influenced by the umpteenth sell-side model of Apple’s gross margins? Do you really need a consultant to tell you how to buy market exposure through ETF’s?

Of course, the same thing happened the last time we suffered through a multi-year investing environment of alpha scarcity and beta dominance, back in the 1930’s. Market makers and investment intermediaries dropped like flies throughout the decade, a process that – like today – was accelerated by sharp shifts in the regulatory environment (Glass-Steagal in 1933, Dodd-Frank in 2010). In fact, it really wasn’t until the mid-1950’s that the financial services industry began to grow dramatically again, not coincidentally with the introduction of Modern Portfolio Theory in 1952 and the expansion of retail brokerages (especially “the thundering herd” of Merrill Lynch) onto every Main Street in the U.S. These twin Narratives of the 1950’s – Everyman Stock Ownership and Modern Portfolio Theory – drove an investment paradigm shift that created modern Wall Street.

I don’t know for sure what the 21st-century equivalents of Everyman Stock Ownership and Modern Portfolio Theory will be for Wall Street, or how and when the associated Narratives will develop. But there is no more important question that Wall Street needs to answer in order to reinvent itself (again), and if I had an hour of Gary Cohn’s time this is what I’d want to talk about. I think that Epsilon Theory is a good place to start in evolving Modern Portfolio Theory into something more useful, and I think that there is already an established set of people and practices that can push paradigmatic change forward: traders and technical analysis.

Like many investors trained with a fundamental bias, for years I pooh-poohed the very idea that technical analysis had anything to offer a “true” investor. Technical analysis was the province of traders, and to call someone a “trader” was about the worst insult you could deliver in these circles. It
was an entirely pejorative term, and it meant that you weren’t as serious or as thoughtful as a praiseworthy “long-term investor”. I was foolish to hold this bias, and I was a less effective portfolio manager for it. My job as a portfolio manager was to make money for my clients – to catch mice, as Deng Xiaoping would put it – not to make money in a theoretically pure way. If technical analysis could have helped me catch more mice – and it could – then I should have embraced it, not dismissed it out of hand.

**Technical analysis is, at its heart, behavioral analysis, and as such is prime real estate to build a new investment paradigm that incorporates game theoretic behaviors.**

Now don’t get me wrong … there are huge problems with the application of technical analysis today. Technical analysis requires a Copernican Revolution. By that I mean it needs to be re-conceptualized away from the Spirograph models and the naive empiricism that currently dominate the effort. Not because the current conceptualization is a failure, any more than the Ptolemaic conception of the solar system was a failure. The world functioned quite well for 1,400 years using Ptolemaic tables to predict the position of planets and stars, thank you very much. But technical analysis could accomplish so much more, both in terms of accuracy and of scope, if it were put on a more solid theoretical foundation. If you try to launch a rocket while believing in a geocentric model of the universe, you’re going to fail. I think that technical analysis could, in fact, “launch a rocket” in that it could drive a paradigm shift in how we think about and operate effectively within modern markets, but only if we change the conceptual center of the trading universe from Price to Information.

When you talk with experienced options traders, it seems as if they can “see” securities in terms of volatility space, not the two-dimensional price-over-time matrix that most investors and traders use as their lens. What I want to suggest is to see ALL securities in terms of what I will call “information space”. In prior work (“Through the Looking Glass”) I laid out this methodology in detail, so I won’t repeat that here. The basic idea, though, is to describe a point in time for a security in terms of the information required to move that security’s price from its current equilibrium to a higher or lower equilibrium.

Above, for example, is a simplified two-dimensional informational scenario for a broad market, say the S&P 500, with the black ball representing the current equilibrium price level for that market and the height of the trough walls representing the informational strength of the current equilibrium level. This is the informational surface. To make the ball “roll” to a new higher equilibrium level requires a strong enough signal (represented by the
green arrow) to get over the right-hand trough wall, and vice versa for the market to go down. The informational surface plus the new information signal combine to create an informational scenario.

This change in price equilibrium levels within an informational scenario can be mapped against a traditional price-over-time chart as shown above, but the depiction in informational space is much more useful than the depiction in price space. Why? Because any given price outcome can be generated by multiple informational scenarios, but any given informational scenario will generate one and only one price outcome. Just knowing the price outcome gives you little idea of how or why that price outcome arose. But if you know the informational scenario you know both the unique price outcome as well as how it came to be. An informational scenario can predict price, but a price can neither predict nor explain afterwards an informational scenario.

Seeing the market in terms of information space will NOT tell you whether the market is going up or down. It shows you how the market is likely to react to new information, and it gives you tools for evaluating the potential market impact of new information. Epsilon Theory is both a methodology (a toolbox for evaluating observed data) and a theory (a conceptualization of observed data). Methodologies and theories are neither true nor false, only more or less useful than alternative toolboxes and conceptualizations, and I have no doubt that Epsilon Theory is not terribly useful for some investment strategies. Sherlock Holmes didn’t care whether the Earth went around the sun or the other way around because it made “not a pennyworth of difference” to his life or his work, and the same is probably true for Epsilon Theory and, say, private equity investing.

But here’s an example of how a common dialog between traders and portfolio managers can be much more useful when reformulated in informational terms.

When a trader tells a portfolio manager that there is “resistance” at a particular price level, and “support” at another, he is making a statement about informational structures created by historical patterns of price movements. This is true regardless of the specific methodology used to determine these resistance and support levels – Bollinger Bands, Fibonacci Series, MACD, whichever. For example, here’s a MACD price chart for Apple that I’ve marked with hypothetical resistance and support levels (NB: I have no idea whether these levels are methodologically accurate, and it really doesn’t matter for the point I’m trying to make):
And here’s that same chart expressed as an informational surface:

The advantage of the informational surface expression over a price chart is that it is (potentially) more accurate, more comprehensive, and more understandable without being more complex.

An informational model is potentially more accurate because the resistance and support levels are not binary or categorical thresholds (resistance vs. support, strong vs. weak) but are variable representations of their inductively derived informational strength or weakness. Rather than simply saying, “there’s resistance at $446” it’s possible to say “it will require 0.6 generic bits of information to get over the resistance at $446 and 1.8 generic bits of information to get over the resistance at $492.” And because there are tools to measure the informational strength of new information, it’s possible to estimate the likelihood that this piece of new information will be sufficient to pierce the $446 resistance but that piece of information will not.

An informational model is potentially more comprehensive because non-price informational barriers can be incorporated directly into the analysis. One of the biggest weaknesses of technical analysis as it is currently constituted is that it only “sees” informational signals based on historical price outcomes. By re-conceptualizing price as information, other important types of information, such as public statements and macro data announcements, can be plugged into the same inductive analytic framework. There’s an enormous amount of intellectual firepower embedded in technical analysis that is underutilized because it is only applied to price data. Information theory provides a common language for every type of signal, and by “translating” all sorts of signals into the language of information we can significantly expand the scope of powerful inferential tools that fall under the rubric of Big Data.

An informational model is potentially more understandable because the dimension of time can be incorporated more easily, or at least more intuitively, into the analysis. All forms of technical analysis are based on some flavor of time series regressions, so it’s not that time is ignored. But by including it graphically as an additional dimension, you can create the
equivalent of a volatility surface, which makes it much easier to “see” the informational dynamics at work.

What I’m suggesting – to treat patterns of price data as an important informational signal within a broader theory of behavioral finance – is not original to me. The Copernicus of this story is George Soros, and the application of game theory to markets has its first (and in many ways still best) expression in his magisterial 1987 book, *The Alchemy of Finance*. I am not going to attempt any sort of summary of the book here, because it defies easy summary. It is, as Paul Volcker (!) writes in his Foreword to the 2003 edition, “an honest struggle by an independent and searching mind to break through a stale orthodoxy with new and meaningful insights into financial and human behavior”, which is just about the highest praise an author can receive. I’ll just add that even though Soros does not frame his core ideas such as “reflexivity” in terms of formal game theory, there is no doubt that this is his intellectual home. Everything that Soros writes about the behavior of markets can be expressed, sometimes more effectively but usually less, as a game theoretic construct.

Reflexivity is the best known of Soros’s core concepts, but also tends to be misunderstood. Rather than repeat Soros’s own words or define it with the language of game theory, let me give you an example of reflexivity as a conversation that happens in one form or another hundreds of times a day, every day, all around the world.

**PM:** Hey, why is XYZ down 3% all of a sudden?

**Trader:** I don’t know. There’s nothing on Bloomberg. Let me ask around.

[2 minutes later]

**Trader:** Nothing on chat. All the desks are calling trying to find out what’s going on.

**PM:** Is there a conference or something where management is talking?
Analyst: I don’t think so. I tried calling IR, left a message.

PM: Well, somebody must know something. I hate this stock ... it could go down 10%. Sell half the position and put a tight stop on the rest. Gotta manage the risk. Let me know if either of you hear anything.

[30 minutes later]

Trader: We got stopped out. You’re flat.

[2 days later when XYZ has fully recovered to its original price]

PM: Hey, false alarm, let’s start putting XYZ back on. I really like that stock.

This is reflexivity.

Like Copernicus, though, Soros has some problems with the concept of reflexivity as expressed in Alchemy of Finance. As written (and for all I know, Soros has kept his best work secret in order to build a fortune), reflexivity is more of a heuristic – a rule of thumb or a way of looking at data – than a practical methodology that can be incorporated into a rigorous evaluation. There’s no language to reflexivity other than the language of price, and that’s a problem for Soros in the same way that it’s a problem for technical analysis ... it limits the enterprise in both scope and accuracy.

But in the same way that elliptical planetary orbits provided the key for translating the central insights of the original Copernican theory into an extremely powerful (i.e., useful) heliocentric model of the solar system, I believe that information theory can translate the central insights of reflexivity into an extremely powerful (i.e., useful) behavioral model of markets.

Here’s the basic idea of how to describe reflexivity in informational terms. Let’s say you have an unstable equilibrium, meaning that the informational barriers for the current price equilibrium to start moving in one direction or the other are quite low. For whatever reason, maybe just the chance result of a large number of Sell orders clustering in time, the equilibrium starts to “roll” to the left.

That price action in and of itself creates a new informational signal.
And if that signal is large enough to push the price outcome to a new equilibrium, then another, perhaps larger signal is generated simply by the price action.

And so on and so on. In retrospect it always seems obvious that the market just “had a mind of its own” and that there was nothing “real” to make the price go down. But when you’re in the middle of one of these episodes it’s not obvious at all. We are biologically hard-wired to pay attention to these signals and to interpret them as part of a larger, more meaningful pattern. These price action signals are entirely real as we experience them, and I think it’s critical to have an investing perspective that treats them as entirely real. That’s what Information Theory provides. **By looking at the phenomenon of reflexivity through the lens of Information Theory, we can “see” its dynamics more clearly than if we’re just looking at price, and as a result we have the potential to anticipate and/or react more appropriately when these events occur.**

This, then, is the goal of Epsilon Theory – to develop a practical methodology to identify the securities prone to game-playing behaviors like reflexivity, and the conditions under which game-playing behavior is more or less likely to occur. By building on the insights of thinkers like George Soros, E.O. Wilson, and Brian Skyrms, I think it’s a very achievable goal. Whether that ultimately sparks a new investment paradigm – who knows? But I’m pretty sure it can help us catch more mice.

W. Ben Hunt, Ph.D., is a market strategist and author who publishes his work at [EpsilonTheory.com](http://EpsilonTheory.com) where he “views capital markets through the lenses of game theory and history.” Dr. Hunt has been a hedge fund portfolio manager and risk manager since 2006, managing long/short equity funds. After earning a Ph.D in Government from Harvard University in 1991, he began his career as a political science professor and taught at New York University and Southern Methodist University. He is an expert in game theory and econometrics and author of *Getting to War* (Univ. of Michigan Press: 1997) and co-author with Michael Laver of *Policy and Party Competition* (Routledge: 1992). In *Getting to War*, Dr. Hunt develops a leading political indicator, using data to predict both the likelihood of conflict and what form of conflict—military or diplomatic/economic—will occur. Prior to becoming an investment manager, Dr. Hunt worked with two software companies. He co-founded SmartEquip, Inc., which enhances maintenance capabilities of the construction equipment industry, and was the founder of GameTheory, Inc., a videogame development company established to commercialize classroom simulation software.
MTAEF CONTINUES BUILDING ON SUCCESSES IN THE ACADEMIC COMMUNITY
BY MIKE CARR, CMT

The MTA Educational Foundation has been working to create and fund educational programs in the field of technical analysis since 1993. In recent years, the MTAEF has been developing a complete course that explains the theory and practice of technical analysis. The curriculum that has been developed is now used by several colleges and universities.

In 2009, the Foundation established an annual award in memory of Mike Epstein. Each year, the award is presented to the person who best exemplifies Mike’s goals for long-term sponsorship of technical analysis in academia and in practice.

The most recent recipients of the Mike Epstein Award were Julie Dahlquist, Ph.D., CMT, and Charles D. Kirkpatrick II, CMT. Dahlquist and Kirkpatrick are co-authors of Technical Analysis: The Complete Resource for Financial Market Technicians. Their book has been one of the readings in the CMT program for several years and is now a part of the curriculum the MTAEF provides to colleges and universities.

Students have been interested in technical analysis for years but professors have had few resources available to them since most of the literature in the field has been written by and for practitioners. As a professor, Julie Dahlquist provided an academic perspective and an in-depth knowledge of the field to Technical Analysis: The Complete Resource for Financial Market Technicians. Charles Kirkpatrick brought decades of practical experience and extensive knowledge of the field to the book. The two of them were able to create the first college-level textbook covering the subject of technical analysis in a way designed for teaching at the college level.

Creating additional resources for professors is now one of the primary goals of Cody Tafel, CMT, who recently became the President of the Foundation.

Lecture notes, PowerPoint presentations for lectures with recent examples for the markets, a sample syllabus and exam questions are now available to instructors on the Foundation web site.

Under Tafel, the Foundation has also established a Guidance Committee which is led by John Earl, Jr., CFA, CFP. Earl is Associate Professor of Finance and Chair of the Finance Department at the Robins School of Business, University of Richmond, VA. He also serves as a Student-Managed Investment Fund Advisor and board member. Based on his academic experience, he is developing guidance for professors who want to publish papers on technical analysis in academic journals.

The efforts of the Guidance Committee and the Curriculum Committee are supported by the Prospecting Committee. This committee is headed by Larry Laterza, President of LWL Consulting Services and an Adjunct Professor of Finance at Rutgers University Graduate School of Business. Working with other members of the Foundation and the MTA, the Prospecting Committee
is introducing professors around the world to technical analysis and explaining the resources that are available to them.

With this integrated committee structure, Tafel is leading the MTAEF into its third decade and helping to position technical analysis for success in the academic community.

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Cody was previously the Director of Trading for Rapidan Capital LLC and also the head trader for Shockoe Capital Partners, a long/short equity hedge fund where he managed proprietary capital and developed systematic trading programs. Cody studied the Turtle Trading Method with an Original Turtle in 2005, and contributes technical analysis commentary as an online author for the Emmy award-winning Web site Minyanville. He earned his CMT designation in 2007 and holds a BA in economics from the University of Virginia.
NAVIGATING THE DOW GEOMETRICALLY USING ‘EARTH-MEASUREMENT’
BY SCOTT HATHAWAY

INTRODUCTION

Geometry: ‘Geo’ means Earth and ‘metry’ refers to measurement. I find this very profound; the word for the world of angles, shapes and associated ratios and formulas actually refers to the measurement of the Earth.

What better field to borrow ideas for geometry from than the science of navigation, which rests upon a basic element of Earth-measurement, the nautical mile (‘NM’), which is simply formulated using two special and related numbers (360 and 60)? The Earth is divided into 360° vertically by longitude, while horizontally by latitude, with each degree further divided into 60 minutes. An individual minute of latitude, and of longitude at the Earth’s equator, is defined as one nautical mile and is quite literally 1/60 of 1° of the equator.

Therefore the Earth’s circumference of 360° measured along the equator is 21,600 nautical miles:

360° x 60’ = 21,600’ = 21,600 NM.

When applied to mass human decision making, which is simply displayed in financial markets, these fascinating numbers can be most fruitful, as I will demonstrate shortly. As for the ‘master number’ 360, it has long been an accepted practice in Gann’s geometric method to utilize a 360-period cycle, as fellow geometric enthusiast Brad Brenneise demonstrated to me earlier this year through correspondence regarding the S&P 500.¹

Building on his reference, it is the 360° Earth-measurement/nautical mile-inspired combination with 60 and 21,600 that is of concern here, as this article will attempt to infuse this concept onto a monthly chart of the Dow Jones Industrial Average.

My objectives are to geometrically define and relate the major reversals since 2000, along with other numerous reversals/crashes, to the major low of Dec 1974, while identifying potential major reversal areas in both price AND time in this possible 5-wave expanding correction.²

(Note: feel free to skip ahead to the last two charts to see the results)

The first chart places the objectives in context:
Using a simple conventional approach, a ‘supply line’ on top and a ‘demand line’ below are drawn from the first and second major tops and bottoms respectively, which indicate a potential upcoming major reversal with a possible large drop to support. This basic technique can be deceptively effective!

Now for the annoying question: Why did those first and second tops and bottoms occur where they did, and hence result in these lines?

And perhaps more importantly: What predictive value can be obtained from such an explanation?

To find out (at least from our topic’s perspective), let’s finally apply the Earth-measurement/nautical mile inspired 60/360/21,600 relationships to the chart.

SET-UP

The next chart establishes the thematic and geometrically necessary price/time relationship of 60 points per month (‘60/M’) by multiplying the traditional one point per month relationship by 60 points (minutes or nautical miles) per month.3

This results in one degree of latitude (or longitude) per month.

Simply put: This relationship results in each point of the Dow representing one minute, or nautical mile. Therefore, geometrically, 60 points (vertical) equals one month, or 1° (horizontal):

Since 360 months represents the full equatorial circumference in degrees (remember, 1° = 1 month), a 360 month cycle is formed from the major low of Aug 1974 at 570.01. Each cycle period of 360 months’ horizontal distance equals 21,600 vertical points (360 x 60/M) representing the equator in nautical miles, giving the top price of 22,170.01, or 21,600 + 570.01; half of which is 11,370.01 or 570.01 + (21,600 /2).

The perfectly diagonal 1x1 line (45°), which graphically represents 60 points per month, connects major cycle points and the price range. It also presents possible major resistance for the current market, which agrees with the large geometric outline in the next section in addition to the resistance (supply) line in the first chart.

APPLICATION

Now the stage is set for some angular explorations in our ‘Earth-based’ geometric environment.
First, let’s identify the ascending resistance of the major highs:

Using the upper right rectangular corner, since it is conveniently to the right of price, the market aligns alarmingly well with the fractionally perfect angle of 22.5°, which is exactly ¼ of the right angle (90°) of price and time. Additionally, 22.5° can also be perceived as ½ of 45°, or the 1x1 line featured on the previous chart.

The current market is teetering just underneath resistance of roughly 15,800. The two former all-time highs of Jan 2000 and Oct 2007 both obeyed this rather domineering fractional angle, which is a natural geometric extension of the low of Dec 1974 as seen through this 60/360/21,600 perspective.

This is a perfect example of a ‘pre-existing’ trend line.

(Note: This is one of my favorite aspects of geometric charting: whether they be traditional Gann angles (1x1, 2x1, 1x4, etc...) or angles in degrees (as in this example), we can arrive at ‘pre-existing’ trend lines which indicate why the first two reversals (required to draw the trend line) were formed where they were.)

Regarding support, the next chart fully reveals the underlying harmonic angular structure of the large expanding pattern; yet again, it is the implementation of the numbers 60 and 360, along with their product of 21,600, which allows these specific angles to exist and describe price action:

In a bizarre procedural twist, support is duly offered by reversing (as support is the ‘reverse’ of resistance) the resistance angles’ direction to the right (retrograde) by starting from the left, and by cutting both the angle and its starting point in half: 11.25° (half of 22.5°) descending forward from directly half of the ‘Equatorial’ circumference (height) at 11,370.01.
This is another perfect example of a ‘pre-existing’ trend line, a truly retrograde and fractionally harmonic version of the first, reveals the exact relationship between the major highs and lows.

Next, by perfectly bisecting the newly formed triangle’s apex (intersection of angles) with a 5.125° mid-line (1/16 of 90°), a clearer picture emerges from shorter-term support (blue arrows) along with a new isosceles triangle base (at 5.125° from vertical), meaning that both angles from the apex to this base are equal in length:

Or will the market reverse back up at this mid-line as a final and failed 5th wave (E-wave) of the correction and then proceed to new heights above resistance in the throes of a new impulsive wave?

Moving on, the next chart demonstrates the true power of the full expression of this isosceles triangle. Important activity before 2000 is pointed out from price levels from intersections of the descending support angle with both the 2nd 360M cycle point and the lower triangular base corner (green arrows). These levels give the top of the Crash of 1987 and the low of Sep 1990 respectively. In addition, the Crash of 1998 at the mid-line is indicated in time by the half level’s intersection with resistance pointing straight down to the crash.

All points are geometrically related:

The entire market since 2000 makes perfect geometric sense, as the mid-line tells of previous mid-trend support, indicating a potential repeat of support for the next major up trend. Perhaps resistance will hold for a fourth time, resulting in a massive correction. It is interesting to note the major intersection of Dec 2034 with 22,170.01 looming in the distance as a potential reversal locale.

But is there more we can get out of the overall Earth-based geometric structure? Is there a possible connection between the relationship of the
two major highs and the two major lows in the expanding pattern that can indicate the next major high and low?

**SEQUENTIAL ANGLE SERIES FROM OPPOSING POINTS**

In this next example I present a fractional angle analysis of the 4 major reversals since 2000, with a notable and conspicuous combination of a repeating numerator with a matching increasing or decreasing denominator by +/-2:

![Image](image_url)

Here, the tops are angularly defined by the upper left corner and the bottoms by the upper right corner (again, opposition for opposite activity). By determining the first two angles for both tops and bottoms, the next projected angles are formed simply by continuing the observable relationships between them: the numerators remain, yet their denominators either increase or decrease by 2.

The market is approaching an intersection of resistance of 15,782.84 for July, as the sequential 1/7 angle looms overhead, lending some confidence to this still experimental technique. The intersection of the major support angle from the triangle with the anticipated support angle of 4/7 (purple) is on May 2016 at 5392; a few points short of 1080 points (360 x3) below the preceding major low of 6469.95, and is a realistic and proportional target compared to the last major downtrend.

However, based on most previous tops and bottoms not occurring perfectly at their respective intersections, a direct hit is not necessarily in order for current price.

As an aside, notice the extended 4/11 support angle (red) continues downward to perfectly nab the powerful hyper-acceleration lift-off for the 2nd stage of the previous major bull market. It took the disastrous financial crash of ‘08 to finally break this titan of support.

7ths make their way into angles and time as a fractional harmonic to be dealt with:

1) The first two 7th division points of the 2nd 360M cycle period, which are 51.43 months apart (purple 1/7 and 2/7 on the bottom), are Mar-Apr 2009 and Jul 2013. These points indicate the major low of Mar ’09 with the current month of Jul ’13, just as the market approaches a major resistance intersection on the same month.
2) May 2016 is 137 months into the 2nd 360 month cycle, which is almost exactly 8/21 (137.14M). The denominator is thematic, as 21 = 7 x 3.

3) A standard 5-wave expanding correction would indicate a final major move downward (‘E-wave’), and in this analysis, it would be housed by matching fractional angle divisions of 7, as opposed to the preceding non-matching angles, as the surrounding odd denominators of 3, 5, 9 & 11 conveniently convene toward their mean of 7. Does this suggest an upcoming end to this overall dynamic? Only time will tell!

CONCLUSION

By infusing the Earth-measurement/nautical mile-based/navigational numbers of 60, 360 and 21,600 into a geometric charting environment, accurate and useful analysis is obtained. By converting 1° of the equator into 1 month, and a matching unit of price of 60 points (60 NM in 1°) not only is the Dow’s forming expanding pattern defined by a pair of fractionally related angles from related major points in price and time derived from the major low of 1974, but all pertinent points identified in the first chart show a geometric relationship to this low.

In addition, fractionally harmonic divisions of the 360M cycle apply to the market, as well as a potential sequential angle pattern. 7ths in both time reversal points and angles are observed, which indicate a potential major top in July at resistance 15,782.84, with a matching major bottom for May 2016 at 5392. These are rough guides, as most previous points were not direct hits.

NOTES

1) This might seem random at first: W.D. Gann, the father of geometric charting, was a high-ranking Scottish-Rite Freemason, whose emblem features two crucial ‘old school’ navigational mapping tools: the square edge and compass.

2) Another distinct possibility is that the preceding 3 large waves have completed an irregular 3-wave correction, with the next impulsive wave already underway since Mar ’09. Always have an alternate wave count!

3) I am referring to the traditional 1 point per month (week, day...) relationship from Gann Methodology, and typically 100 points per month for such a large price range found here. Notice that 60 is 3/5 of 100, maybe bringing in a slightly ‘pentagonal’ influence?!

4) The mid-line’s angle of 5.125° (1/16 of 90°) is arrived at by bisecting the apex angle, and defining it by horizontal as 0°, just like all other angles:

Calculated using degrees:

- The apex angle is the sum of both angles: 22.5° + 11.25° = 33.75°
- Bisect apex angle: 33.75° / 2 = 16.875°
- Subtract lower angle (descending from 0°): 16.875° – 11.25° = 5.125°
Calculated using fractions of 90°:

- The apex angle is the sum of both angles: $\frac{1}{4} + \frac{1}{8} = \frac{3}{8}$
- Bisect apex angle: $\frac{3}{8} \div 2 = \frac{3}{16}$
- Subtract lower angle (descending from 90°): $\frac{3}{16} - \frac{1}{8} = \frac{1}{16}$
- Convert to degrees: $\frac{1}{16} \times 90° = 5.125°$

Scott Hathaway has been developing new charting methods for several years, including an alternative geometric environment called ‘Relative Charting.' His work also focuses on unusual applications of square numbers and prime numbers for time and price, as well as several fan systems. His website hathawayanalysis.com features some of his work. Scott is currently a CMT candidate.
INTERVIEW WITH PHIL ROTH, CMT
BY AMBER HESTLA-BARNHART

What led you to look at the particular markets you specialize in?

The first market I focused on was equities. My first technical job, starting in 1967, was an assistant to Bob Farrell, who ran the technical department at Merrill Lynch. This job was my first opportunity in research after a year in a training program at ML. This was fortunate since I had been interested in stocks since my early teens. I worked in a German bakery for 8 years, starting as a “pfanneputze” in 1955, (the kid who cleaned the pans and mopped the floor) and becoming a baker. All the bakers, starting with the boss, were interested in the stock market and that’s all we talked about. And the boss kept meticulous charts. The boss also traded commodities, so commodities were my secondary interest. I retired in 2012 after 46 years in the business.

Do you look at any fundamental or economic inputs to develop your opinions?

I have always been interested in the other markets is so far as they impact equities. So the action of interest rates, commodity prices, and currencies is my “fundamental” input. I believe everything that is influenced by supply and demand is fair game for the technician. The only “fundamentals” that are not technical are estimates. For example, a P/E ratio is an important technical indicator since it is driven by psychology.

What advice would you have for someone starting in the business today?

The financial business today is almost totally different from when I started. All my jobs (I was the chief technical market analyst at Loeb Rhodes, EF Hutton, Shearson-Lehman, Dean Witter, Morgan Stanley and Miller Tabak) were on the sell side. Sell side profitability has virtually disappeared since public trading is low (and much of its in ETF’s) and the sell side firms discourage trading anyway. They just want their brokers to gather assets and place them under management. Major institutional categories, such as private and public pension funds, have little cash flow. If trading is discouraged, little research, either fundamental or technical, is required. That leaves hedge funds as the primary contributor to volume; they pay tiny commissions and do much of the research themselves. Hence, my advice to someone trying to earn a living as a technician is to seek a job on a trading desk (buy side or sell side), any job at all, and use your technical skills to improve performance. And I have one big caveat: don’t pretend to divine the future. No one knows where the DJIA is going to be on December 31; all we can do is “assess the trend and advise the appropriate action”. Nothing irritates me more than technicians who pretend to have a crystal ball.

What is the most interesting piece of work you’ve seen in technical analysis recently?

I haven’t seen any technical research in recent years with something truly unique or innovative. After all, how many ways can one analyze trend or momentum? Find a few trend/momentum indicators that you feel comfortable with, and set and use stops.
What research area do you think offers the greatest potential in technical analysis at this time?

Technicians have to be seen as augmenting research and trading, not competing with fundamentalists or strategists or quantitative analysts. What we do overlaps those other professions. What technicians do, which other people within the industry have failed to achieve, is apply risk control. Success in the markets is much more a function of limiting losses on the mistakes than seeking out and finding the great trades. Pick a risk control method you are comfortable with (and this will change depending on the market, volatility, and time horizons) and stick with it.

While you haven’t really seen novel or unique research in the past few years, would you say the quality of research has improved?

Technical analysis jobs are mainly trading situations these days, and traders generally don’t publish. The outlets for technical research, such as the MTA Newsletter and the MTA Journal, do seem to be presenting higher-quality material. But most of the material (see 5 above) is a new spin on old momentum indicators. To raise the standards of technical analysis research, especially in the eyes of academia, we need to see more thoroughly documented studies in the areas of psychology (what we call “sentiment analysis” and academia calls “behavioral finance”).

For many years, you have been involved with the MTAEF. Could you tell us about the goals of the Foundation and current initiatives you’re working on?

The MTAEF’s raison d’etre is to introduce technical analysis to universities, with a goal to getting the subject taught for full credit at the undergraduate and graduate levels. Among the schools where the EF is currently teaching or soon to teach the subject include Richmond, Baruch, Rutgers, Texas A&M, Golden Gate, Brandeis, Maryland, and Georgia Tech. We have been actively pursuing Pace, Penn State, Hofstra, St. Thomas, Virginia, and others. While the MTAEF receives some funding from the MTA, the EF actively raises funds with seminars, silent auctions, and “Take an analyst to lunch” auctions.

Do you think technical analysis will ever be widely accepted in the academic community?

Acceptance of technical analysis by academia is a school-by-school process. In most cases, the process entails getting in the door to make a presentation or several presentations, then finding a receptive faculty member, then proposing a course, then vetting a teacher. We are doing this. Obviously with the quantity and diversity of academic institutions we need more resources, both financial and volunteer. I believe universities ultimately will offer what students want; students want what they can use. Public interest will create demand for academic studies of our discipline. Academics must publish to be successful. More academic studies will increase credibility. Increased credibility will increase public demand. I believe that virtuous cycle is what created the huge interest in fundamental analysis and the CFA program. Then the CFA program gave fundamental analysis its support.
Could you use help with the Foundation? If so, how can others get involved?

The MTAEF needs much help. MTA members who have a relationship with a college as an alumnus or otherwise can help get us in the door. We need MTA members who want to teach; the MTAEF will provide training and materials as needed. We need MTA members with graduate degrees (MBA’s are great, PhD’s are even better), since many colleges require adjuncts to have advanced degrees. We need MTA members who can help raise money or assist with our fundraisers.

Philip J. Roth, CMT, now retired, was formerly the Chief Technical Market Analyst at Miller Tabak + Co. He spent over 40 years as a Wall Street professional, having been the chief market technician at Morgan Stanley, Shearson Lehman, EF Hutton, and Loeb Rhodes.

Phil is a former director of the New York Society of Security Analysts and long-time board member and past president of the Market Technicians Association and among the first recipients of the CMT designation. He was voted No. 1 in Charting and Technical Analysis in the 2001 Reuters survey. He has regular appearances on CNBC for expert market opinion and frequent market opinions in the print media.

Phil is an Adjunct Professor in Technical Analysis at Fordham University Graduate School of Business Administration; and has lectured at Baruch, Columbia, Cornell, Georgia Tech, Rutgers, Tulane, Howard and the University of Richmond. Phil graduated from the University of Notre Dame with a B.S. in economics and attended Rutgers University graduate school.

These questions and answers are compiled by Amber Hestla-Barnhart, a writer specializing in option for profitabletrading.com. If you’d like to participate in a future interview, please contact Amber at amzhondacbr@yahoo.com
Editor’s note: This is an example of an analysis that applies the theory of technical analysis to create an action plan. The thought process Jonathan applies to portfolio management is easy to follow and instructive.

In this report the goal of our sector allocation will be to tactically outperform the S&P 500 on a relative basis.\textsuperscript{1} We will adjust our portfolio weightings by maneuvering into leading sectors and shying away from the losers, at least from a technical perspective assuming a 3-6 month timeframe.

My objective is to uncover the intermediate and long-term technical drivers while at the same time providing the tactical guidance required to navigate the ever-changing market conditions.

As of July 1, 2013, I see several critical factors in the market.

It is interesting how the 5/23/13 negative outside day pattern marked a price high for the S&P 500. The subsequent 6/20/13 downside gap and the 6/21/13 negative outside week pattern confirmed that concerted distribution forces were at work. The S&P 500 as well as these sector ETFs still need to repair this damage as none have made new highs. However, not all sector ETFs are the same. Simple relative strength studies can quickly show which sector ETFs are performing better or worse than others, which can be very helpful in the context of managing a portfolio. For example, the relative strength chart of Consumer Discretionary Select Sector SPDR Fund (XLY) has again broken out to all-time highs, making it the only sector ETF in this report to do so. On the other hand, the Materials Select Sector SPDR Fund (XLB) has violated a pivot low made in April 2013. These divergences are evident in the table below. From a broad market perspective, continue to monitor how the S&P 500 behaves around next support (1534-1540) as a potential head and shoulders top could be forming.

My views on sectors are contained in the table below and detailed after that.
<table>
<thead>
<tr>
<th>Name/ (Ticker)</th>
<th>Technical Allocation</th>
<th>Over/ Under Allocation</th>
<th>Support</th>
<th>Resistance</th>
<th>10-week ma</th>
<th>30-week ma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Select Sector SPDR Fund (XLK)</td>
<td>Neutral</td>
<td>0.0%</td>
<td>29.94; 29; 28; 27-27.25</td>
<td>31.53; 32-32.31; 36; 38.42</td>
<td>Rising</td>
<td>Rising</td>
</tr>
<tr>
<td>Financial Select Sector SPDR Fund (XLF)</td>
<td>overweight</td>
<td>1.0%</td>
<td>18.58; 17.75; 17.20; 16.70</td>
<td>20.35; 22; 24.50; 25.83</td>
<td>Rising</td>
<td>Rising</td>
</tr>
<tr>
<td>Health Care Select Sector SPDR Fund (XLV)</td>
<td>Neutral</td>
<td>0.0%</td>
<td>46.76; 46; 45.10; 43.75</td>
<td>50.40; 52; 54; 60</td>
<td>Rising</td>
<td>Rising</td>
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<tr>
<td>Consumer Discretionary Select Sector SPDR Fund (XLY)</td>
<td>overweight</td>
<td>4.0%</td>
<td>53.96; 51.47; 49.40; 48-48.50</td>
<td>56.58; 58.09; 60; 67</td>
<td>Rising</td>
<td>Rising</td>
</tr>
<tr>
<td>Energy Select Sector SPDR Fund (XLE)</td>
<td>Neutral</td>
<td>0.0%</td>
<td>76; 73.52; 71.44; 70</td>
<td>80.69; 83.95; 90; 91.42</td>
<td>Rising</td>
<td>Rising</td>
</tr>
<tr>
<td>Consumer Staples Select Sector SPDR Fund (XLP)</td>
<td>Underweight</td>
<td>-3.0%</td>
<td>38.87; 38; 36.59; 34.90</td>
<td>41; 42.20; 44; 48; 50</td>
<td>Rising</td>
<td>Rising</td>
</tr>
<tr>
<td>Industrial Select Sector SPDR Fund (XLI)</td>
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<td>1.0%</td>
<td>4.137; 40; 38-38.50; 37</td>
<td>43.48; 44.70; 46; 50</td>
<td>Rising</td>
<td>Rising</td>
</tr>
<tr>
<td>Materials Select Sector SPDR Fund (XLB)</td>
<td>Underweight</td>
<td>-3.0%</td>
<td>37.10; 34.44; 32.65; 31.41</td>
<td>40.26; 41.61; 43; 46.54</td>
<td>Rising</td>
<td>Rising</td>
</tr>
<tr>
<td>Utilities Select Sector SPDR Fund (XLU)</td>
<td>Neutral</td>
<td>0.0%</td>
<td>35; 34.22; 32 29.45</td>
<td>38.45; 39.50; 41.50-42; 44.66</td>
<td>Falling</td>
<td>Rising</td>
</tr>
<tr>
<td>iShares Dow Jones US Telecom Index (IYZ)</td>
<td>Neutral</td>
<td>0.0%</td>
<td>24.76; 23.61; 22.50-23; 20.66</td>
<td>25.72; 27.60; 30; 35; 38-40</td>
<td>Rising</td>
<td>Rising</td>
</tr>
</tbody>
</table>

Source: Metastock XENITH and J. Beck investments
**Technology Select Sector SPDR Fund (XLK):** The relative strength breakout from the 2012 downtrend line still suggests intermediate to longer-term leadership as long as XLK remains above its April 2013 low. Violation of this support, again relatively speaking, would negate this call. The price chart still needs to repair damages made by the heavy selling over the last couple of weeks. Initial resistance remains the top of the 6/20/13 downside gap at 31.53.

**Financial Select Sector SPDR Fund (XLF):** XLF managed to hold onto initial support near the bottom of the 5/3/13 upside gap (18.68) and bounce back to close the 6/20/13 downside gap. This is a good sign that the selling is abating. The ability to close this gap allows for initial resistance to move back to the May 2013 high (20.35). In the meantime, it appears that a trading range is unfolding between these two levels.

**Health Care Select Sector SPDR Fund (XLV):** There are a couple of things going on that need to be monitored. The first is the potential head and shoulders top pattern that looks to have been developing over the past 3 months. Neckline support appears to be in the 46-47 range. The other is on the relative strength chart as XLV has held up fairly well and could be on the verge of a breakout as it is pushing up against overhead resistance.

**Consumer Discretionary Select Sector SPDR Fund (XLY):** From a relative strength perspective, XLY is the only sector ETF that has broken out to all-time highs. This in its own right is a constructive sign for the market as it is evident that investors are not fleeing to the safety of more defensive sector ETFs. The flip side to this call is that XLY continues to trade below its 6/20/13 downside gap. Repeated failures warn of a test of the June 2013 low (53.96).

**Energy Select Sector SPDR Fund (XLE):** XLE briefly violated its 2012 uptrend line before bounces back. It would take a weekly close below this line to suggest a sustainable change in trend was taking place. Despite the 9.5% May-June 2013 decline, XLE still maintains rising 10/30-week moving averages. However, the 6/20/13 downside gap needs to be close above 80.69 in order to show investors that some of the damage was being repaired.

**Consumer Staples Select Sector SPDR Fund (XLP):** XLP has bounced off of support in the upper-30s, which corresponds to the June 2013 low and the 150-day / 30-week moving averages. However, in the process of the May-Jun 2013 decline, there has been technical damage, such as the 5/31/13 negative outside week pattern, the rolling over of the 50-day / 10-week moving averages and a series of lower low/highs. This warrants a cautious outlook.

**Industrial Select Sector SPDR Fund (XLI):** The bullish call is based upon two large symmetrical triangle breakouts earlier this year and an intermediate to longer-term trend that remains favorable. The bearish camp could be looking to the 6/21/13 negative outside week and a potential head and shoulders top as early warning signals. I prefer to follow the dominant trend, but will be ready to switch gears on a confirmed violation of neckline support near 40.
**Materials Select Sector SPDR Fund (XLB):** In hindsight a 5/24/13 negative outside week pattern might form a head of a potential head and shoulders top pattern that looks to be developing. A 6/20/13 downside gap and another negative outside week during 6/21/13 are alluding to a test of neckline support near 37.10. The ability to maintain support could help form the right shoulder. From a relative strength perspective, XLB continues to breakdown last week.

**Utilities Select Sector SPDR Fund (XLU):** As various other sector ETFs look to be in the midst of some kind of distribution patterns. XLU has already broken down from one in May 2013. It now appears that a healthy bottoming process is underway, although some more work needs to be done. For example, a move above the June 2013 high (38.45) snaps a string of lower highs on the daily chart and strengthens its June 2013 low as initial support.

**iShares Dow Jones US Telecom Index (IYZ):** IYZ has closed its 6/20/13 downside gap, which helps to stabilize the selling pressure. However, what appears to be the thorn in its side is overhead supply near 27.50-27.60 or the June 2008 reaction high and the recent May 2013 high. From a relative strength perspective, IYZ is still in the process of recovering from its April-June 2013 underperformance. A move above its April 2013 downtrend line helps this process.

These views can be used to develop a specific strategy:

**Notes:**

1. When relative strength is referred to, please consider it in conjunction with the S&P 500 unless otherwise noted.

<table>
<thead>
<tr>
<th>Name/ (Ticker)</th>
<th>Technical Allocation</th>
<th>S&amp;P 500 Weights$^2$</th>
<th>Over/ Under Allocation</th>
<th>JB1$^3$ Weights</th>
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<tr>
<td>Technology Select Sector SPDR Fund (XLK)</td>
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<td>17.8%</td>
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<tr>
<td>Financial Select Sector SPDR Fund (XLF)</td>
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<td>16.7%</td>
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<td>Health Care Select Sector SPDR Fund (XLV)</td>
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<td>Consumer Discretionary Select Sector SPDR Fund (XLY)</td>
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<td>Energy Select Sector SPDR Fund (XLE)</td>
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<td>Consumer Staples Select Sector SPDR Fund (XLP)</td>
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<td>Industrial Select Sector SPDR Fund (XLI)</td>
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<td>1.0%</td>
<td>11.2%</td>
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<td>Materials Select Sector SPDR Fund (XLB)</td>
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<td>-3.0%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Utilities Select Sector SPDR Fund (XLU)</td>
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<td>2.8%</td>
</tr>
</tbody>
</table>
GLOBAL EMERGING GROWTH CAPITAL

Investment Courses For Professionals
A sample of a growing list of fundamental and technical courses is shown below.
The courses are associated with global destinations and dates, both for open and private client formats. They are produced by various knowledge vendors throughout the world. Details can be provided by contacting NYIF.COM, or John Palicka (palicka@pipeline.com).

Taught by John Palicka CFA CMT

FUSION ANALYSIS-
This is a professional approach that blends fundamental, technical, behavioral and quant strategies.

EQUITY PORTFOLIO MANAGER-
Serious managers will utilize this course to analyze leading Wall Street valuation models and investment strategies for equities using fundamental, behavioral/technical and quant approaches, and then study how these are modified by the best performing equity portfolio managers to produce risk-adjusted excess returns.

INVESTMENT FUND SELECTION-
This is a must attend course for all professionals involved in the selection and management of third-party investment managers.

TECHNICAL ANALYSIS CMT 1-
A must attend course for investment professionals wishing to gain the CMT Level I professional qualification in Technical Analysis from the Market Technicians Association (MTA).

INTRODUCTION TO STEALTH TRADING USING FUSION, ALGORITHMS, AND DERIVATIVES FOR PROFESSIONALS-
Today, portfolio managers increasingly must use stealth trading in order to disguise their intentions and thus benefit from best execution.

ADVANCED CAPITAL MARKETS ANALYSIS
Spot, forwards, futures, swaps, options, and statistical issues are discussed in dynamic capital market strategies.

STRATEGIC GOLD INVESTING
Gold has been one of the very few assets to have created wealth in the past several years. Gold offers investment opportunities for investors, traders, and financial engineers.

GLOBAL SMALL CAP INVESTING
Global small cap stocks offer investors the ability to participate in the world’s future big winners.

PORTABLE WEALTH INVESTING
Portable Wealth (PW) management offers investment opportunities for wealthy investors and their advisors. PW can generate attractive risk-adjusted excess returns to traditional and alternative investments.

Instructor John Palicka CFA CMT is a top-ranked portfolio manager of Global Emerging Growth Capital (WWW.GLGEGC.COM) with over 30 years experience of managing $ billions. He has doubled client money, on average, every 4 1/2 years since 1980*. His high course ratings from major investment firms reflect clear interpretations and practical applications of complex topics; knowledge applied to examples and cases found in the current worldwide and GCC marketplace; his experience with specific situations actually encountered in his career and consulting contracts that parallel the learning topics. John has an MBA from Columbia University and also teaches these courses for leading training institutions, including The New York Institute of Finance (WWW.NYIF.COM).

* Past performance is no guarantee of future results.
Technical analysis involves identifying changes in the market. Generally technicians focus on price action but fundamental data can also be plotted on charts and fundamental indicators, just like technical indicators, can change over time. Elsewhere in this issue, Phil Roth points out that a P/E ratio is an important technical indicator since it is driven by psychology. Faber expands on the idea that traditional fundamental indicators are also technical indicators and focuses his attention initially on dividend yields.

In *Shareholder Yield*, Faber identifies that the importance of dividends has changed over time. He notes that, “due to legal, tax, and structural changes in the US markets, dividend payments have become a less prominent method by which companies return cash to shareholders. Dividend payments are only one use of a company’s free cash flow; other uses of cash include: share repurchases, debt paydown, reinvestment in the business, and mergers and acquisitions. Consequently, investors in the 21st century must look to all of the direct and indirect ways in which companies distribute their cash to shareholders, a metric commonly referred to as “Shareholder Yield”.

This short book offers a number of charts to support that conclusion. In one example, Faber shows that dividend yields are low but they have been low for a number of years. The chart also shows that buybacks have increased over the years and buybacks are now as important as dividends to shareholders.

Technical analysis is practical as well as theoretical and Faber shows how to put his insights into practice. *Shareholder Yield* offers a number of strategies that can be used to implement the fact that stocks with high shareholder yields outperform lower yielding stocks in the long-term, on average.
From 1982 through 2011, buying stocks with a high dividend yield would have provided returns that outperformed the index. Shareholder yield provided a better way to find stocks than dividend yield did and adding momentum to the shareholder yield provided the best returns.

Long-term investors are increasingly seeing the benefits of adding technical tools like momentum to their strategy. Shareholder Yield adds to that idea in a unique way by redefining the entire concept of yield.

Short Selling Stocks with ConnorsRSI by Larry Connors, Cesar Alvarez & Matt Radtke

With stocks near record highs, thoughts of a bear market are common. Actually traders always seem to be concerned about when the next bear market will begin. The goal of trading is to capture profits and because markets seem to fall faster than they rise, shorting stocks in a bear market would be an ideal strategy for generating large short-term gains, at least in theory.

Although short selling is appealing, it is also difficult to do in a profitable way. Testing shows that flipping the buy rules of a system to find shorts generally leads to losses. One reason for this is that stock markets have moved higher in the long-term and short trades are fighting that trend. That long-term trend makes it difficult to find mechanical strategies that work for short selling.

Adding to the difficulty of short selling is the risk. Losses are theoretically unlimited since the potential price gains of any stock are unlimited. As prices rise, traders with short positions will be required to add collateral to their accounts when the market moves against them. To overcome this problem, short traders need to have a high probability of winning.

In the latest volume of their Trading Research Series, Connors Research presents a mechanical short selling strategy that works. The system is based on the ConnorsRSI indicator, an adaptation of RSI that incorporates price changes, momentum, duration of the trend, and the relative magnitude of the price change into a single indicator.

Short Selling Stocks with ConnorsRSI presents simple and reproducible rules along with a number of variations on those rules that allow a trader to
adapt the system based on their personal risk tolerance. A sample of the results is shown below.

Simulated Historical Trades from Jan. 2001 - April 2013 (short only, ranked by % Winning Trades)

<table>
<thead>
<tr>
<th>Variation</th>
<th>Avg. % Profit/Loss</th>
<th>Avg. Trading Days Held</th>
<th>% Winning Trades</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9.40%</td>
<td>10.24</td>
<td>78.72%</td>
</tr>
<tr>
<td>2</td>
<td>6.86%</td>
<td>3.74</td>
<td>77.56%</td>
</tr>
<tr>
<td>3</td>
<td>5.79%</td>
<td>4.04</td>
<td>76.97%</td>
</tr>
<tr>
<td>4</td>
<td>6.28%</td>
<td>2.19</td>
<td>76.70%</td>
</tr>
<tr>
<td>5</td>
<td>4.42%</td>
<td>3.70</td>
<td>76.69%</td>
</tr>
<tr>
<td>6</td>
<td>5.47%</td>
<td>3.99</td>
<td>76.64%</td>
</tr>
<tr>
<td>7</td>
<td>4.37%</td>
<td>3.74</td>
<td>76.24%</td>
</tr>
<tr>
<td>8</td>
<td>4.00%</td>
<td>3.68</td>
<td>76.13%</td>
</tr>
<tr>
<td>9</td>
<td>7.42%</td>
<td>10.29</td>
<td>76.11%</td>
</tr>
<tr>
<td>10</td>
<td>6.41%</td>
<td>3.79</td>
<td>76.10%</td>
</tr>
</tbody>
</table>

This is a unique book with detailed strategies that work for short selling, an area that has been largely neglected in the literature of technical analysis. Traders will be able to place trades on the short side immediately after reading this book. They will also have a detailed understanding of how to design a trading system that offers potential rewards based on mechanical rules and can then develop their own short selling strategies based on the ideas in *Short Selling Stocks with ConnorsRSI*. 
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THE TECHNICAL TAKE: A WEEKLY TECHNICAL PERSPECTIVE
BY ROBERT DOMBROWER, CMT

Editor’s note: This is an extract of an internal, weekly macro technical research report written solely to address the concerns of the Quantitative Strategies Group (QSG) at ICC Capital Management Company. The topics and layout are designed specifically for the needs of QSG in terms of content and formatting. This report was prepared on July 26, 2013 and opinions expressed in this report may have changed since then.

Report Summary

• Markets ended higher last week as earnings season got under way as the Tech’s rattled while the Financials emboldened. The long term VIX trace has once again tested long term horizontal support in the low teens.

• The S&P 500 Weekly Candlestick (7/26/13) seems to have trouble consolidating which confounds the bear camp time and again seemingly, and we too have been calling for caution as the 24 week cycle shown above looked as though an inversion was in progress, yet with the latest record and fresh new pivot high one can argue the bear case at their own peril. The longer term technical setup remains constructive despite near term divergences in RSI and Stochastic as price remains above all three moving averages which are all positively sloped. Near term resistance resides at 1700 (psychological round number) with near term support at 1630 (short term rising bullish support) and 1600 (psychological round number).

• RRG rotation this week shows marginal action from the previous week with the most notable moves occurring in Technology, most likely as a result of earnings disappointments by bellwether names GOOG and MSFT. Industrials improved slightly within the improving quadrant as it seems poised to enter the leading quadrant, and the defensive areas of Utilities and Staples experienced slight gains in RS momentum from within the lagging quadrant.

• The S&P 500 SPYDERS short term candlestick charts show that Materials is the only sector that has not posted a bullish 20 over 50 day simple moving average cross. Price action in all sectors remains above both averages, attesting to the short term bullish feel to the equity markets.

• Technology (XLK) / S&P 500 relative strength remains bearish on all time frames.

• Industrials (XLI) / S&P 500 relative strength remains bullish on the short term, and consolidative on the intermediate and long terms.

• 10 Year Treasury Price (TY1) and S&P 500 E-mini (ES1) candlestick chart correlation has turned positive indicating a possible shift in overall asset allocation to stocks from bonds.

• The Continuous Commodity Index (CCI), Journal of Commerce Index (JOCI) and S&P GSCI Total Return (SPGSCITR) Indexes remain in respect of their major declining resistance lines indicating consolidative to weak action across the asset class as a whole.
• The **10 Year Treasury (USG10YR)** Yield daily candlestick chart remains bullish on all time frames.

• The **Crude Oil (CL2)** daily candlestick analysis (7/26/13) shows near term consolidative action after posting a new pivot high from last Spring’s high (horizontal resistance). The next area of horizontal resistance remains at **110.50** along with the **120** pattern measuring objective. The **Crude Oil (CL2) 1 X 3 Box Point and Figure (7/26/13)** chart shows the bullish trend extending with a thrust that could warrant a new upside measuring objective if activated. For now, **113** remains the upside vertical measuring objective.

• The **GOLDS weekly candlestick (7/26/13)** shows the oversold conditions in RSI, ADX and the Stochastic that is probably fueling the latest reflex rally. Bearish trend remains in gear. The **GOLDS (20) X 3 Box P&F (7/26/13)** chart shows the current rally within the context of the greater bear market in GOLD. The most recent “O” column has been established with the current “X” column and a new downside target of **760** would activate with a move to **1179.99**.

The **S&P 500 Weekly Candlestick Analysis -- Confounding the Bears!**

• The **S&P 500 Weekly Candlestick (7/26/13)** chart is shown with trend line, moving average, cycle and momentum analysis to track the technical setup of the ongoing bull market.

• The “Running of the Bulls” in Pamplona Spain seems like a fitting analogy for the current market action as those who go against the momentum stand to get gored! This bull run seems to have trouble consolidating which confounds the bear camp time and again seemingly, and we too have been calling for caution as the 24 week cycle shown above looked as though an inversion was in progress, yet with the latest record and fresh new pivot high one can argue the bear case at their own peril. The longer term technical setup remains constructive despite near term divergences in RSI and Stochastic as price remains above all three moving averages which are all positively sloped. Sentiment remains healthy as we have seen in previous
renderings of advance / decline measures and Dow theory charts, and participation remains meager as equity flows, while positive, are still historically light which is a bullish characteristic. Near term resistance resides at 1700 (psychological round number) with near term support at 1630 (short term rising bullish support) and 1600 (psychological round number).

Sector Watch – The S&P 500 Relative Rotation Graph (RRG)

- **RRG** rotation this week shows marginal action from the previous week with the most notable moves occurring in **Technology**, most likely as a result of earnings disappointments by bellwether names GOOG and MSFT. **Industrials** improved slightly within the improving quadrant as it seems poised to enter the leading quadrant, and the defensive areas of **Utilities** and **Staples** experienced slight gains in RS momentum from within the lagging quadrant.

Asset Class Watch – Bond Price and Stock Price – Correlation Positive

- The **10 Year Treasury Price (TY1)** and **S&P 500 E-mini (ES1) candlestick chart** is shown above with correlation analysis in order to track the asset class rotational tendency of the market.
- This chart was featured by **Eoghan Leahy, CMT, MSTA** in the latest **Technical Strategies** piece from Bloomberg, which represents an interesting take on possible rotational movement between stocks and bonds, in that a positive correlation between the two prices could...
indicate a shift in asset allocation between them. As shown above, since this past May, correlation has turned positive which could denote the beginning of a shift towards stocks from bonds. **Conclusion:** 10 Year Treasury Price (TY1) and S&P 500 E-mini (ES1) candlestick chart correlation has turned positive indicating a possible shift in overall asset allocation to stocks from bonds.

Robert Dombrower, CMT, is a Senior Vice President and Equity Portfolio Manager at ICC Capital Management ($3B AUM) in Orlando, Florida. He manages four equity products (Core Value, Large Growth, International ADR, Sector Rotation) as part of a four member quantitative team, managing over one billion on behalf of the Union, Public, Corporate, and HNW arenas. In addition Robert team sub-advises the Quaker Funds Capital Opportunities Mutual Fund (QUKTX in Fall 2012) which is a tactical quantitative multi-strategy combining all four strategic equity styles in a dynamic, risk controlled construct. Robert also spearheads the technical research effort through the creation and implementation of quantitative technical overlays, qualitative, top down and bottom up technical research, and intermarket analysis and forecasting. Prior to joining ICC, Robert was a quantitative Large Cap portfolio manager and manager of operations at Paradigm Asset Management in New York and began his financial career at Independence Investment Associates (John Hancock) in Boston, as a quantitative portfolio management associate. He holds a BA (hon) in English Literature and Music from Binghamton University, and an MM in Music, Summa Cum Laude (Opera Performance, Theory) from Boston University.
The NASDAQ 100 could be undervalued by some measures. Over the past ten years, the index has provided investors with a total return of 9.6% while earnings have risen by an average of 19.1% a year. A similar picture can be seen in the NASDAQ Composite where earnings have grown at an average of 14.1% a year while prices gained 8.1% a year.
MTAEF ANNOUNCES FALL 2013 FUNDRAISER
ON NOV. 14TH – SAVE THE DATE

The MTA Educational Foundation is pleased to announce that a date has been set for our Annual Fall Fundraiser! Join the MTAEF on Thursday, November 14th, 2013 at the Newman Library at Baruch College in New York City for an evening of cocktails and an exciting panel discussion, including a current market outlook. This year, we’re proud to feature the following speakers:

ROBERT AX
ANDREW MCKNIGHT
JERRY PARKER
RUSSELL RHOADES
MIKE SANTOLI

Registration will open soon! Visit MTAEF.org for more details.

AUTHOR GUIDELINES

The Market Technicians Association serves a global community and the organization’s publications strive for articles that can be easily understood by readers around the world. To meet that objective, all submissions to Technically Speaking should be in English and minimize the use of vernacular phrases and references. This is necessary to improve the readability for international members who may not understand phrases commonly used in one region but unknown in most of the world.

In Technically Speaking, we want to publish articles that use simple language whenever possible. Specific terms associated with financial analysis in general and technical analysis specifically should be defined unless they are found in the MTA’s Body of Knowledge. The editors may have to make changes to any work that is published for clarity and consistency.

Submissions should not use text boxes or advanced text formatting, as they make it more difficult for our staff to implement into our newsletter layout.

Please send any material you would to have considered for publication before the 20th of the month. We will work to include anything received by that date in the next issue.