LETTER FROM THE EDITOR

At the Annual Symposium in March, Jason DeSena Trennert explained why he was bullish. He summed it up as “TINA” or “there is no alternative.” Months later, his presentation is just as timely. Large investors running pension funds or insurance companies understand stocks are expensive but they are faced with the reality that there is no alternative.

This month’s newsletter includes a summary of that presentation and demonstrates the value of the Symposium. Presentations like Jason’s are both timely and timeless. As your schedule permits, I urge you to remember that videos of this year’s presentations and the previous four years are available at http://symposium.mta.org/ and can be viewed at anytime.

Dr. Bryan Taylor also presents timely and timeless information. Using data going back nearly 200 years, Bryan demonstrates history is repeating in Greece. The fact that history repeats is one of the basic precepts of technical analysis. We can be certain history will repeat in the future which is why technical analysis will continue to add value to the investment decision process.

This value is being demonstrated by academic research as we explain in this issue. We also explain how the value of technical analysis is driving changes in the careers of technicians and these changes resulted in an update to the CMT program.

As always, we welcome your feedback. Please let us know what you think of Technically Speaking, the MTA magazine, by emailing us at editor@mta.org.

Sincerely,

Michael Carr
Jason DeSena Trennert is the Managing Partner and Chief Investment Strategist of Strategas Research Partners LLC and the Chairman and Chief Executive Officer of the firm’s broker-dealer subsidiary, Strategas Securities, LLC. He provided an economist’s view of the markets at the MTA Annual Symposium and that view includes a number of insights that are useful to technical analysts. The complete presentation is available at the MTA’s Knowledge Base, the web’s free repository for everything related to technical analysis.

In March, Jason noted, “As the 2015 trading session grinds ahead, many investors are considering how changes in the global market environment will impact their investments and strategy. The collapse of energy prices, Greece’s impact on Euromarkets, U.S. interest rate speculation and slowing growth in China are just a few important macro trends that will impact asset allocation and alpha generation in the year ahead.” His presentation provided a top down approach to global markets with particular emphasis on the effects of policy, sentiment and economics on the one-year investment horizon.

Jason’s presentation was called “TINA Goes Global” and as he explained TINA means “there is no alternative.” In his view, in a world of financial suppression where central banks are holding interest rates at a very low level, there’s really no alternative to equities for large institutional investors. California’s pension plan, for example, has an actuarial assumption of 7.5% which means bonds are an unattractive option in the current environment. Other pension plans and insurance companies face similar pressures.

Based on the reality that there is no real alternative to equities, Jason believes four themes are driving the investment markets in 2015. He starts with the belief that the rest of the world won’t lower U.S. economic growth. In fact, he believes global economic surprises will be on the upside. In this environment, he expects cyclicals to outperform defensives. This will partly be driven by the fact that downward earnings revisions have most likely overshot the mark. His final major theme is the belief that bullishness on U.S. Treasuries is becoming a consensus opinion.

One specific factor driving his outlook is the fact that a decline in oil prices benefits developed economies. Declines in oil are highly correlated with future gains in economic growth as the chart below shows.
Economic growth is one reason to be bullish. Monetary policy is another reason to be bullish. Martin Zweig famously said “don’t fight the Fed” and Jason pointed out that right now, the bears are fighting every major central bank in the world.

Fed easing has largely been going to bank reserves, a trend economists monitor with the velocity of money. The velocity of money is the ratio of nominal GDP to the money supply, M2 in Jason’s example. Velocity can be thought of as the number of times each dollar in the money supply is spent in the economy. Prior to 2000, the velocity of money was greater than 2 and nominal GDP was more than twice the size of M2. As the Fed eased in response to the financial crisis, the velocity of M2 has slowed and the latest data shows velocity was 1.52 at the time of Jason’s presentation.

Velocity is more than an economist’s talking point. It is also a factor bearing on inflation. When velocity is low, inflation is expected to be low. When inflation is low, investors are willing to pay more for stocks. This is reflected in the price-to-earnings (P/E) ratios. In the current environment, with inflation below 2%, a P/E ratio near 18 can be considered normal.
Individual investors seem to be acting as if they are not accepting this relationship. Based on money flow indicators, the average individual investor has been avoiding the stock market. The nearby chart shows net flows into mutual funds and ETFs. With the market cap of the S&P 500 near $19 trillion, net inflows of $8.6 billion over the past six years can be thought of as a rounding error. Individuals seem to be over-allocating money to bond funds, possibly because they don’t understand the risks of the bond market.

New regulations might create additional stress in the bond market if a selloff occurs. In the past, banks served as “shock absorbers” in the bond market. New regulations could prevent banks from fulfilling this historical role. This could create unforeseen problems in bonds and with such a high degree of public participation in that market, the market reaction is unpredictable.

Institutional investors are also moving away from the stock market but they are moving into alternative investments. These investments include hedge funds and could include significant equity exposure to equities but alts create new risks and introduce additional unknowns into the markets.
While TINA might not sound like the most compelling reason to be long stocks, Jason points out it is certainly not a reason to short stocks. With nowhere else to go, he believes there will be bumps along the way but the bull market could continue until macro conditions change.

Jason DeSena Trennert is the Managing Partner and Chief Investment Strategist of Strategas Research Partners LLC and the Chairman and Chief Executive Officer of the firm’s broker-dealer subsidiary, Strategas Securities, LLC. In 2006, Mr. Trennert co-founded Strategas, which originally began with just five employees. Today, the firm employs over forty-five research analysts, institutional salesmen, and sales traders, at its offices in New York and Washington DC., and is fortunate to count among its clients some of the world’s largest mutual funds, investment advisors, pensions and endowments, and hedge funds. Over the course of his career, Mr. Trennert has earned a reputation for being a keen and thoughtful market observer. His thorough analysis and humorous, often contrarian research pieces are read by top institutional investors and corporate executives across the globe. Widely quoted in the domestic and foreign press, he is a regular guest host on CNBC’s “Squawk Box” and “Bloomberg Surveillance” with Tom Keene. He is the author of the popular investment book, New Markets, New Strategies, published in 2005 by McGraw Hill.

Prior to founding Strategas, Mr. Trennert was the Chief Investment Strategist and a Senior Managing Director at International Strategy & Investment (ISI) Group where he built and oversaw two of that firm’s most visible and impactful
research efforts, its Company Surveys and Investment Strategy groups. He has an MBA from The Wharton School at the University of Pennsylvania and BS in International Economics from Georgetown University.

Jason is also the author of My Side of the Street, a book that is “part memoir, part love letter to an institution popularly viewed as a necessary (or as just plain) evil, My Side of the Street delivers the long-overdue defense of the investment banking industry critiqued by Michael Lewis and others, illuminating the ethical and decent majority who take the subway, worry about mortgages, and keep the entire enterprise on its feet.

Introducing the general reader to captains of finance, famous on The Street but invisible to outsiders, Trennert lays on display the absurdity and unbridled joy of big business—a comic tale of unlikely success in America’s most notorious industry.”
Nelson Fraser Freeburg, Jr., 63, died suddenly on June 27, 2015 while on business in New York City.

Nelson Freeburg was the editor of Formula Research, a newsletter that develops systematic timing models for the stock, bond, and commodity markets, and serves investors and traders in 27 countries since 1991. He was also a research consultant working with institutional money managers to design proprietary timing models. Nelson had been an active trader since 1980 and occasionally spoke about his work to audiences around the world. He frequently spoke to MTA Chapters and his work is familiar to many members.

He was born in Memphis on December 13, 1951, the first of four children of Helen Hull and Nelson F. Freeburg. He graduated from Memphis University School and then Lawrence University in Appleton, Wisconsin from which he earned a degree in philosophy. He then went on to obtain a Master of International Relations from Columbia University in New York, the city he loved so much and knew so well.

Upon returning to Memphis, Nelson worked for a short time with the family real estate investment company but developed a keen interest in technical analysis of the stock market. In 1991, he published the first issue of his newsletter, Formula Research, which gave subscribers from all over the world insight into predicting trends in the market. He was a respected member of the investment community and was often asked to speak at conferences dedicated to investors and money managers. He was also on the Board of Directors for The Hussman Funds from June 2000 until the time of his death.

Nelson was an avid reader and traveler, but his favorite times were with his wife, Carole, and their three sons. He always turned the conversation away from himself and toward other people and the things that interested them. He was a skilled raconteur and had a marvelous sense of humor. He was gentle and encouraging. He was an eager and patient listener and simply wanted the best for all who knew him. He is preceded in death by his parents and leaves his wife, Carole Jennings Freeburg and their three sons, Nelson Fraser Freeburg, III (Trip), and twins Charles Jennings Freeburg and Scott Hull Freeburg. He also leaves his siblings, Houston Freeburg (Pamela), Emily Freeburg Kay (Harvey) and Philip Freeburg (Debbi).
The saga of the European Default continues with Greece playing the starring role. If this were a play, the audience would be shouting at the director “will this show ever end?” All kidding aside, the Greek debacle is no small affair and has been making consistent headlines for more than two years. In fact, Greece has one of the worst track records of any country in Europe when it comes to default.

Between 1826 and 1964, Greece was in default for 90 of those 138 years, so it should come as no surprise that Greece will most likely become the first Euro member to default. In the good old days, countries defaulted first and came to an agreement with creditors later. Unfortunately, this is not the case as the European Union acts like a nurse maid trying to protect all its countries or groups from being hurt by a default. So what do they do? They provide a bailout for a protected class and spread the cost on to everyone else.

Greece is a serial defaulter, and the European Union kept forgiving Greece’s transgressions. In economics, this is called moral hazard. In other words, a moral hazard exists when a group can act however it wants because they will not have to take responsibility for their actions.
A Pattern of Serial Defaults?

The previous paper, “Greek Loans and Greek Defaults: Déjà Vu All Over Again” detailed Greece’s first default of 1827 when it managed to default even before gaining independence. The Three Great Powers (Great Britain, France and Russia) guaranteed a loan of £2,100,000 in 1833 to help Greece after it gained independence. Since Greece was in default on previous loans, the country couldn’t issue any new loans, and as you might guess, Greece defaulted on this loan sticking Great Britain, France and Russia to foot the bill.

Greece remained in default on its bonds until 1878. As part of one restructuring in 1846, the Greeks detached the coupons due between 1827 and 1846 from the original bonds and they traded separately. By the time the Greeks finally restructured their defaulted debt in October 1878, the 1824 bonds were £275 behind in principal (£100) and interest. Bondholders received £31.6 for every £100 nominal of the old bonds, of which £275 was due (an 88.5% write down).

Having settled their outstanding loans in 1878, Greece was able to issue a new 5% loan to help build the Piraeus-Larissa Railway and issue a monopoly loan. Greece pledged revenues from tobacco taxes, revenues from national lands and plantations and some customs receipts. Despite this, Greece still defaulted in 1893.

After war with Turkey in 1897, a Special Commission was appointed by the Six Great Powers: Great Britain, France, Germany, Austria-Hungary, Italy and Russia, who examined the finances of Greece and put together the Settlement of 1898. Greece threw everything into the pot, monopolies on salt, petroleum, matches, playing cards, cigarette paper and
Naxos Emery; stamp and tobacco dues; and Piraeus customs (import) duties. Interest payments were lowered to 43% of the Monopoly Loan and 32% of other loans and a sinking fund of 1% per annum of original interest was required to 1902 and 2% thereafter.

To make sure Greece paid, the country was put under an International Financial Commission that had the responsibility of collecting the revenues to pay off the debt. After the Commission paid off the portion of the debts due for that year, the remainder was returned to the Greek Government.

Not having the Greeks run Greece worked out pretty well and Greece managed to stay out of default until 1922 until Greece began paying reduced interest on some of its loans from the 1800s. Following a banking crisis in 1931, Greece plunged back into default and Greece reduced the interest payments on all of its debt in July 1932 to 25% of interest due and suspended all principal payments. When Greece was occupied by Germany and Italy in April 1941, they suspended all interest payments. The hyperinflation of 1941-1944 wiped out the value of all internal debt and no principal or debt payments were made until 1963.

The Greek Government offered to settle its outstanding US Dollar debt on December 31, 1962, reducing its interest payments from 6-7% to 2.00-2.35%, rising to 3% by 1967. Coupons before 1950 received no interest, and coupons between 1950 and 1962 received 2.00-2.35% interest. This settlement was applied to all Greek debt in 1964.
The Agreements of 1898 and 1964 didn’t require Greece to redeem its debt, but laid down sinking fund requirements for gradually retiring outstanding debt and forgave most outstanding interest payments. Greece had outstanding debt from 1881 that was still outstanding until the 1960s. The concept of 10-year bonds that get rolled over into new 10-year bonds is a relatively new concept that became more popular than sinking fund bonds after World War II.

**Adopting Euro Delays Default**

So how has Greece managed to avoid default since 1964? Simple, they joined the European Union in 1981. Joining the European Union meant that Greece got a constant influx of money from the rest of Europe to promote development, reducing the need to rely on internal taxes to fund spending and to default when spending exceeded revenues.

Greece joined the Euro in 2001, two years later than anyone else. In order to join, each country had to get its government deficit below 3% of GDP and either have government debt below 60% of GDP or have its debt shrinking as a share of GDP. After Greece was admitted to the Euro, they admitted they had cooked the books to get in. Greece suffered no Consequences as the leaders of the EU turned a blind eye to this fraudulent behavior. Countries were supposed to keep their government deficit under 3% of GDP and when Portugal exceeded this limit, there were threats of imposing financial penalties on Portugal if they didn’t change. But when France and Germany exceeded the 3% limit, they decided to forgo any financial punishment for any country, paving the way for future Greek excesses. Still, no consequences.

Banks were told they could use the debt of any country as default-free collateral to meet Basel credit requirements, and with Greek bonds paying higher yields than German bonds, the flood gates were opened. No punishment, lots of rewards. Greece lied about its finances again during the Financial Crisis of 2008, and the consequence? Germany led a concerted effort (now there are 16 countries helping out Greece) to provide a credit transfusion to Greece since they are unable to go to the financial markets.

**Let Greece Default and Get it Over With**

German politicians are happy to use the German taxpayers’ money to bail out Greece, but most German taxpayers are tired of eternally bailing out the Greeks. When the Germans finally bail out Greece, they will have no one to blame but themselves.

Greece is a serial defaulter. Like an outlaw that can’t be reformed, Greece kept breaking the rules. When default became inevitable, Germany and the rest of the EU sent Greece hundreds of billions of dollars since Greece could get nothing from the open market. So what incentive does Greece have to change its behavior?

The problem is not just Greece. It is the entire EU political system. The Euro was originally established to create a common market, using a single currency and reducing the boundaries of trade, labor and capital. However, the original
reasoning behind the establishment of the Euro has not been maintained. Rather, the political side of the Euro has now taken over and it has now become a massive redistribution machine.

**Politics Trumps Economics**

Rule number one of economics is politics always trumps economics. Creating a single market in Europe, just as the one in the United States, was a good idea provided policies could have been maintained. But when Germany and France allowed Greece to operate outside of proper practices and forgave its indiscretions, this established a pattern of disciplinary negligence. Also, by allowing their banks to buy Greek debt as if it were the same quality as German debt, they only helped to create the conditions they now regret.

Most German taxpayers say, let Greece default. Once the current financial crisis is over with, Greece will start breaking the rules again using the threat of default to get hundreds of billions from the rest of Europe. Greece is like a member of the Mafia who goes over to Germany and says, “Nice little currency you got there, give me a hundred billion or I’ll smash it.” Avoiding default only drags the crisis out and raises the eventual cost to Europe. It’s time to let Greece default and move on.

The Data Series used in this article may be found in GFDatabase Products.

Dr. Bryan Taylor serves as President and Chief Economist for Global Financial Data. He received his B.A. from Rhodes College, his M.A. from the University of South Carolina in International Relations, and his Ph.D. from Claremont Graduate University in Economics. In 1990, Dr. Taylor began collecting and transcribing financial and economic data from historical archives around the world, which are now collectively known as the GFDatabase. Dr. Taylor enjoys analyzing financial markets in which he authors articles and blogs utilizing data derived from all of GFD’s databases. GFD specializes in providing Financial and Economical Data that extends from the 1200s to present—beyond what traditional data vendors provide. For nearly twenty years Global Financial Data has been accumulating and transcribing rare data sources into research-quality databases. The company distributes current market data from traditional data feeds and also offers the historical data that are not available from these common electronic sources. For more information, please visit [Global Financial Data](https://www.globalfinancialdata.com).
THE CMT PROGRAM TODAY: WHY THE PROGRAM HAS CHANGED AND HOW YOU WILL BENEFIT

Editor’s note: Gordon Scott, CMT, Managing Director of the CMT Program, recently offered an information session discussing changes to the CMT program. The full presentation can be viewed here. This summary is provided as an effort to increase awareness of members about the changes.

The Chartered Market Technician program has been evolving since the beginning. Among the most visible changes in recent years was the decision to change the requirement for a paper to complete the Level III requirements. That change was met with skepticism but in hindsight we know that change helped to improve the program. With a paper, CMT candidates demonstrated detailed knowledge on a single aspect of technical analysis. With the test, CMT candidates are now required to have in-depth knowledge related to a number of topics.

Beginning with the next test administration in October, there are more changes to the curriculum. These most recent changes are simply the result of a process put in place many years ago to ensure the program will remain relevant.

At the center of the change process is the Job Analysis Survey. Test preparation experts at Prometrics note that the job analysis survey is designed “to identify the tasks needed to perform a job and the knowledge/skills needed to perform these tasks. Through this research, an organization is provided with an up-to-date perspective on roles and responsibilities of a profession based on empirical research to ensure that the organizational initiatives continue to be aligned with important current, emerging and future practices. This information also provides the basic for psychometrically sound and legally defensible examinations.”

The Job Analysis Survey is a critical process in many professional certification programs. The MTA has a long-standing commitment to implement best practices across the organization and in keeping with that commitment completes a Job Analysis Survey every five years. As a result of the most recent survey, the organization confirmed there have been significant changes in the financial industry. This conclusion was based on more than 1,000 responses that were received and was confirmed through focus groups and other activities. Data revealed modern financial analysts and professionals need to be capable of completing tasks associated with risk management and portfolio management.

An increased emphasis on risk management and portfolio management in some ways demonstrates the past success of the CMT program. When the MTA was founded in 1974, technical analysts pursued their craft largely as a stand-alone discipline. John Magee, co-author of one of the first books on chart analysis, is said to have worked solely from charts. Magee didn’t use news or fundamental inputs of any kind in his analysis. In the 1970’s, other technical analysts were able to follow this approach.
This was possible forty years ago because technical analysis was often one discipline in large brokerage firm research departments. Technicians were able to limit their research to technical factors and brokerage firm customers considered the technical outlook along with fundamental and economic reports prepared by other analysts. Research staffs have evolved over time and are now smaller. Analysts are often called upon to be experts in multiple areas and the growing acceptance of technical analysis has led to an expanded role for technical analysts.

These changes were evident in the Job Analysis Survey and the new CMT curriculum addresses the needs uncovered by the survey. The new CMT curriculum recognizes there is a stronger integration among disciplines. That increased integration leads to a better discipline in applying technical analysis and an increased use of technical analysis as a risk management tool.

Under the new curriculum, the basic structure of the exams is unchanged. The three levels are still focused on building professional knowledge and ensuring CMTs can clearly express detailed opinions grounded in the principles of classical technical analysis.

Changes come in the structure of some questions. Scenarios can be tested that include specific questions related to chart analysis, risk management and portfolio considerations. Questions based on intermarket analysis, for example, can also include additional parts on risk management and portfolio considerations. The result of the changes may be less dramatic when viewed this way. The new CMT curriculum is simply focused on the type of situations an analyst will encounter in the real world. A single scenario in the test and in the office where a technician works has implications beyond technical analysis. An integrated approach to analysis will make technicians more valuable in the work place.
While the changes might seem significant, the new curriculum simply reflects the reality of the new market for financial professionals. There are few jobs available for dedicated technical analysts at sell-side research firms, the jobs that many of the MTA’s members held in the 1970’s. In the current market, jobs are available for those who can communicate concepts associated with risk and the new exam helps CMTs become more skilled in this area. Notice that the exam will not require candidates to memorize formulas but the focus will be on how to apply the concepts related to the formulas.

For example, the test will not include the formulas for calculating value at risk (VaR). But candidates will be expected to understand what VaR is and that could help them tailor their research to make it more meaningful. A technician might be able to explain how VaR model assumptions could be tightened based on current market conditions since key technical levels would indicate a trend change occurred before a large loss was incurred.

Change has always been a part of the CMT program and will continue to be in the future. Planning for the next Job Analysis Survey is already underway.

CMT Level I Exam Prep Course

Prepare for the CMT Level I Exam with the world’s premier Technical Analysis educator, The New York Institute of Finance.

Learn More
How would you describe your job?

It’s like putting together jigsaw puzzle pieces. A lot of research and preparation for each day. It always feels like detective work to me. Markets always seem to leave "footprints" before they move, and I love to look for those signs, especially using patterns that can be early indications of a turning point and direction.

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

Mostly efficiency and knowing my own limitations. I have always done best with focusing on a few markets and not having a lot of open positions. For example trading an index versus individual stocks offers an opportunity to analyze one index instead of scanning through many stocks for a trading opportunity. If I am trading grains, then I will look for the clearest patterns that I use to determine which market to trade.

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

No, I do not look at fundamentals or economic inputs. The reason is the patterns that I use are leading, and I have found that input that is contrary can have an impact on the actual trading.

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

There is so much information available today that I think it can actually be a detriment to learning markets, price behavior, technical analysis and trading or investing strategies. It’s almost a revolving circle because on one hand there must be some type of education and learning curve. On the other hand what tends to happen is there is a lack of understanding as to the depth of what is really necessary and people tend to drop one thing and go to what looks like greener fields.

I would advise finding a strategy that resonates strongly with the individual. Find someone that knows that method and work with them one on one. Learn the method inside and out that you are interested in and prove to yourself that it can work or cannot work, don’t take anyone’s word for that. I think that it is very difficult to trade another trader’s strategy, eventually you have to put your own stamp on it and make it your own in some way.

Commit to the process of learning, there is not a set time and for each individual it will vary. I think it is a mistake to try and learn trading within a specific time frame, it leaves room for missing too many important elements that may be vital...
in the long run for success. After the large learning blocks are in place then it is the smaller pieces and fine tuning both in method and mindset that are the most important to learn. Experience is a great teacher in this business, so a lot of the learning has to be experienced, many times more than once.

There must be a passion for this work. I think the MTA offers great resources for those wanting a starting point. There are many archived materials and ongoing education, covering a broad range of approaches that can help anyone find what is interesting to them. Of course, there are the CMT exams, which will give a thorough education in the field of technical analysis.

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

I think Tom McClellan's work through one of his publications, Chart in Focus, is always interesting. He does amazing work in finding correlations and relationships between markets, events and even weather phenomenon. I really don't know how he comes up with some of the relationships, but they are always fascinating to read and think about.

**What research area do you think offers the greatest potential in technical analysis at this time?**

I find Relative Rotation Graphs (RRG) very interesting. The graphs were created by Julius de Kempenaer. The graphs are a great tool for assessing increasing strength or weakness in markets and individual stocks in a very visual format.

Leslie Jouflas, CMT, has co-authored two books, *Trade What You See - How to Profit from Pattern Recognition* (Wiley & Sons, 2007), published in English, German Italian, Chinese and Japanese, and *Essentials of Trading: It's Not WHAT You Think, It's HOW You Think* (Traders Press, 2004), and has many published articles for such publications as *Trader's Journal*, *Active Trader*, and *Technical Analysis of Stocks & Commodities*. In addition she teaches live workshops and webinars providing ongoing education for traders. Leslie has been an invited speaker at many of the Trader’s Expo's and has done several interviews with the Money Show. Leslie founded [www.tradingliveonline.com](http://www.tradingliveonline.com) website which is an educational website teaching traders to become confident, consistent and proficient using specific pattern recognition.
Editor's note: these introductory articles were originally published at RelativeRotationGraphs.com and are reprinted here with permission.

BACKGROUND OF RRGS

Relative Rotation Graphs slowly came to life while I was working as a sell-side technical analyst for an investment bank in Amsterdam.

My job as an analyst (sell-side) was to cover European equities and equity sectors from a technical perspective and provide the clients of the bank with a technical “view” and generates trade ideas on the basis of that "view." Ultimately the bank would only generate money when the clients would actually put their orders through us and we could earn a commission on the execution of the trade. As only writing up your view in a report or an email and send it off was not enough to do the trick, every analyst had to communicate his/her view and ideas to the clients by presenting them.

Sometimes this meant visiting clients in person but most of the time by getting on the phone. The big problem however was (and still is) that these clients, typically fund-/ portfolio managers, are very busy people with a lot of sell side people battling for their attention. They are very hard to get a hold of which resulted in a lot of talking to voice mails. On the rare occasion that you would actually get the PM on the line they are usually very rushed and only interested in a very short pitch of an idea. But with the large universes that technical analysts usually cover, unlike their fundamental counterparts, it is very difficult to get your ideas across in a very condensed but clear way.

As the client base of an investment bank almost exclusively consists of professional fund- and portfolio managers whose job it is to "outperform" some sort of "benchmark" my work concentrated on Relative Strength analysis. Not to be confused with RSI (Relative Strength Index) which is a widely used technical indicator. Relative Strength here means the analysis of two securities against one another, or Comparative Relative Strength.

WHAT ARE YOUR BEST FIVE SECTORS / STOCKS?
This is probably the most asked question by portfolio managers. As described earlier, the PMs on the buy-side are always very busy and they want the analysts on the sell-side to be short and to the point. So instead of talking through a whole universe of sectors the quickest way to pick someone's brain is to ask this question and see if one or more of the names that come out match with their own ideas to see if there is ground for a further discussion. So, what I was looking for was a way to “rank” a universe and answer that question.

Ultimately this led to the creation of Relative Rotation Graphs™

This new chart-type can now help the portfolio managers on the buy-side and the sales / trading people on the sell-side to quickly get a view of what is going on in their universe and point the discussion in the right direction.

For (prop) traders, hedge-fund managers etc. it is a great tool to very quickly generate trading ideas that are worth further inspection.

**RELATIVE STRENGTH CONCEPT**

“Relative Strength” or RS is a widely used concept in technical analysis to compare the price performance of one security against the price performance of another security in order to choose which one of the two is to prefer over the other.

This RS should not be confused with the very popular “Relative Strength Index” or RSI by Welles Wilder. The RSI is a single-security indicator which measures “overbought/oversold” conditions of that security where RS compares two different securities in order to facilitate a choice. To avoid confusion, RS is often referred to as Comparative Relative Strength or Relative Strength Comparative etc.

Relative Rotation Graphs are based on this Comparative Relative Strength concept.

The formula to calculate Relative Strength is simple:

\[
RS = \frac{\text{Price of security A}}{\text{Price of security B}}
\]

The outcome of this formula is a (RS) line that usually is plotted in combination with the price chart of security A.
The chart above shows the price chart of the US Consumer Staples sector in combination with the Relative Strength line of the Consumer Staples sector against the S&P 500 index.

The interpretation of this Relative Strength line or "Raw Relative Strength" as I often call it is very straight forward. When the RS line moves up the Consumer Staples sector is outperforming the broader market and should be "overweight" in portfolios. When the RS line is moving down the Consumer Staples sector is underperforming the broader market and should be "underweight".

A very good example of how this works can be seen in the period between the two dashed blue lines. During that period the Consumer Staples sector is showing a nice steady up trend on the price chart but the Relative Strength line is moving down in a steady down trend. The message here is that during that period the general market, as measured by the S&P 500 index, was rising at a faster pace than the Consumer Staples sector which therefore should be underweight in a portfolio.

As you can see the RS line pretty much looks like and behaves like a regular security price chart. This means that we can use all the tools in our technical analysis toolbox, like moving averages, trend lines, support/resistance etc, to analyze this RS line and make a call on its expected future direction.

**RRG INDICATORS**

Working with relative strength analysis and the values of RS-lines creates a problem when one would like to answer the question "What are the n best sectors/stocks?".
This is caused by the fact that the numerical values of a raw RS line cannot be compared to the numerical value of another RS-line in the same universe. Looking at the STOXX sector universe for example, the RS value of the Automobile sector cannot be compared to the RS value of the Insurance sector. In other words, the universe cannot be "ranked" by this RS value.

**JDK RS-RATIO**

My basic approach for analyzing these RS lines was, and still is, a trend-following approach to gauge whether the relative strength of a sector was moving up or down to make a call for overweight or underweight positions. However, without any modification the problem of "not comparable figures" remains. The solution to this problem was found in the "JdK RS-Ratio", this is a proprietary indicator that uses a normalization algorithm which takes into account not only the comparison against the benchmark but also the comparison to all other elements in the universe. The result is a line that oscillates around the 100-level, where values above 100 indicate a positive trend in the RS-line and vice versa. This indicator enables "ranking" of a universe and basically answers the question: "What are your best five stocks/sectors/....etc."

![Chart showing the JdK RS-Ratio line in combination with the STOXX Technology index.](image)

The chart above shows the JdK RS-Ratio line in combination with the STOXX Technology index.

It can be seen that 103/104 seems to a "high" value for this sector and as we know high-values are good and low values are bad.... However, when the RS-Ratio line moves through or into that 103-104 area from below I like it as the trend is still rising and strong. But when the RS-Ratio line hits the 103/104 area from higher levels I like it a lot less.... Although the relative strength is still good in that case it is moving down already..
So what we also need to know is the slope and the direction of the JdK RS-Ratio line.

**JDK RS-MOMENTUM**

Rate of Change or Momentum is a widely used indicator among technical analysts to do just that, measure the direction and the speed of a price move. In this case however we do not want to measure the speed and the direction of a price move but of the move in a relative strength line, the JdK RS-Ratio line. But we also need to do it in such a way that the values that we get will be comparable across the universe.

This exercise led to the creation of the JdK RS-Momentum line which is the second, proprietary, indicator that is needed to create Relative Rotation Graphs. The JdK RS-Momentum line is a normalized measure of the Rate of Change of the JdK RS-Ratio line.

In the second chart the JdK RS-Momentum line is plotted in combination with the JdK RS-Ratio line which was already visible on the first chart. It is clearly visible that the Momentum line leads the Ratio line. When the RS-Momentum line crosses above the 100-level a low has been formed in the RS-Ratio line (see vertical dashed green line) which started to move up. And vice versa, when the RS-Momentum line crosses below the 100-level a top has been set in the RS-Ratio line which then has started to move down.

As the values of the JdK RS-Ratio and the JdK RS-Momentum lines are comparable across the universe they can be used to rank securities based on RS-ratio or RS-momentum or any combination of these two.
RRG CONSTRUCTION

The construction of Relative Rotation Graphs is based on a scatter plot. The slide show above enables you to page through the various stages of rotation with a short explanation for every stage.

The RRG takes two inputs. The JdK RS-Ratio values on the x-axis (horizontal) and the JdK RS-Momentum values on the y-axis (vertical). The center point of the plot (100,100) is the base or the benchmark against which all elements in the plot are measured.

- **LEADING** - This means that in the top right-hand quadrant, the Leading quadrant, items will show up that are exhibiting a positive trend in their relative strength and this positive trend is still being pushed higher by a positive momentum. As we all know momentum, or rate of change, is a leading indicator. So as soon as the pace of the RS-Ratio line starts to fade its rate of change will start to decline. When the rate of change turns negative, the RS-Ratio line has formed a top and started to decline.

- **WEAKENING** - At this moment, when the JdK RS-Momentum line drops below the 100-level, the item moves into the lower right-hand, the weakening, quadrant.
LAGGING - If the weakness in relative strength persists and the negative momentum continues to push the RS-Ratio line down below the 100-level (on the RS-Ratio axis) the element moves into the lower left-hand quadrant of the plot, the lagging quadrant. In that lagging quadrant we find the elements of which relative strength is in a down trend which is still being pushed further down by weak momentum.

IMPROVING - The up-turn follows the same anatomy as the down-turn. The first thing that will happen is that JdK RS-Momentum will start to pick up, signalling that the pace of the down trend is faltering. When the RS-Momentum line crosses above the 100-level a low has been formed in the RS-Ratio line which by that time has started to move up. At that time, when RS-Momentum crosses above 100, the item moves into the top left-hand quadrant, which is labeled the improving quadrant. Items in this quadrant are still showing a negative trend in relative strength but the worst is over and the forming of a low is in process.

FULL ROTATION - Eventually when this improvement continues the RS-Ratio line will rise above the 100-level as well which brings it back into the top right, leading, quadrant, completing a full rotation.

TRAIL - In order to put the move of an element through the RRG plot into perspective the observations can be connected which creates a 'trail'. This trail shows the rotation over the past n observations and as it is based on a trend-following approach a continuation of that rotation may be assumed under normal circumstances. A static RRG plot shows the trail over the past n observations, dynamic RRGs show the trail over time moving it forward one observation at a time. This creates the 'snake-like' movement that visualizes rotation of relative strength among elements in a universe.

BACK TESTING RRG

Can RRG be back tested? Or, what is the track-record for RRG? These are probably the two most frequently asked questions since their introduction. The short answer would be: "There is none"! But let me try to clarify that a bit.

RRG is best seen and used as you would use a 'regular' chart. Which means that different people will interpret the chart differently. Just like the interpretation of regular charts some users are very aggressive and take positions early while others are more conservative and take positions late. Same with the use of moving averages. People who use crossings of price and a 5 day MA will get a lot of signals while people who use a 50 day MA will get a lot less signals. Is one better than the other? I don't know, it all depends on the style and the goal of the user/investor/portfolio manager/trader. Same with the interpretation of RRGs.

What you need to keep in mind is that the rotation in the RRG plots is based on a trend following algorithm which takes into account the relative strength of all elements in the universe and goes through a normalization process. This is the real added value of RRG and enables users of RRGs to judge the relative positions of all elements in the universe that they are studying against a benchmark and against each other.
If you want to go the route of back-testing, in my opinion, it is important to use a true portfolio level approach. In other words you cannot simply come up with a rule (any rule based on RRG values, does not matter which one) test it on one security and then make a judgment. So one should come up with 'rules' that create 'portfolios' based on RRGs and test the performance of these portfolios and not of single instruments. Finally, and I am sure you are aware of this, RRGs look at relative strength so any back-test should look at relative returns and not at absolute returns.

Having said all of the above I am not a 'fan' of building a system that 'only' uses RRGs or RRG values. The way I present RRG is that I think it is best used as a starting point of analysis to give the user a grip of what's going on in his or her universe/portfolio etc and then apply the workflow he or she is used to and familiar with. RRG will help these people to spend their valuable time looking at and analyzing securities that are worth looking at (from both a positive and a negative point of view). In the same way I would like to promote RRGs as an 'element' of a trading plan or - system. For example as a filter for picking trades in say a simple moving average system; when the MA system signals a long-trade only take it when RRG values full fill certain criteria (JdK RS-Ratio>98 AND JdK RS-Momentum>102, something like that) same with short-trades.

This will ensure that one only trades long in the securities that are showing increasing relative strength and only short when the security is showing weakening relative strength. Obviously there are hundreds or thousands of different values and interpretations you can come up with.

For me, ever since I had the first very basic RRG plot on my screen running on a lot of spaghetti VBA code in excel and looking not nearly as nice as Bloomberg and Market Analyst have put it together on their systems, it is acting like Pandora's Box. Every time you open it gives you a new angle or a new way to look at things which may not be clearly visible, or clearly not visible, using traditional charts and tools.

Hope this helps you in your use of RRGs in your daily work. Please feel free to throw ideas out here in the forums group or in the Bloomberg chat box! That is what the forums and the chat are for!

Julius de Kempenaer is the creator of Relative Rotation Graphs™ which are available on Bloomberg since January 2011 under the mnemonic RRG<GO>. Julius is the Director of RRG research and based in Amsterdam, the Netherlands and is a graduate of the Dutch Royal Military Academy (KMA), 1986. In 1990 he left the air force as a captain and entered the financial industry as a portfolio manager for Equity & Law (now part of AXA investment managers). In 1992 Julius moved to IRIS/Robeco as a buy-side quant/technical analyst until 1997 when RABObank acquired Robeco. He then moved to RABObank International as head of technical analysis on the
trading floor in Utrecht. Until June 2007 he served in a similar role on the trading floor of Kempen & Co. in Amsterdam. From 2007 to mid 2014 Julius was the director of quantitative strategy at Taler Asset Management Ltd. where he co-authored various asset allocation strategies that have been successfully implemented in discretionary managed accounts as well as a UCITS investment fund.

He left Taler in 2014 to be able to solely focus on the growth of RRG research primarily through partnerships with professional data vendors and software developers to make RRGs™ available to a wider audience and provide relative strength based research to professional investors and professional entities (websites, brokers, asset managers, etc.) that serve retail clients.

William O'Neil + Company is proud to have sponsored this year’s Market Technicians Association’s Annual Symposium, where leading market technicians discuss topics relevant to the industry. To help drive these discussions, we are offering attendees of the event exclusive access to our PANARAY® iPad app.

PANARAY is uniquely engineered to allow investors to visualize equity data. Using our proprietary Datagraph™ format, our charts explicitly depict stock performance and trends along with critical fundamental and technical factors in a single view.

Our PANARAY iPad App represents a quantum leap in on-the-go utility and clarity, using state-of-the-art graphics. Attendees who access to PANARAY on their iPad will experience a whole new level of efficiency and convenience in their evaluation of stocks.

Registration gives you complimentary access for up to 30 days in April. Please register here.
In a recent article featured in our twice monthly McClellan Market Report newsletter, we featured the chart shown this week. It was inspired by some work done recently by famed technical analyst Peter Eliades, who has been a newsletter writer for many years and is the proprietor of www.stockmarketcycles.com.

The basic point is that a period of 150 months (12.5 years) shows up in lots of places as the time distance between several important turning points for stock prices. The price data in the chart this week is the log value of the monthly close of the DJIA. Using log scaling allows us to better see the turning points without the effect of arithmetic scaling interfering with the view.

Readers should understand that this is not meant to show a 150-month cycle persisting throughout history. Rather, it is an interesting coincidence that if you count forward by about 150 months from almost any major price turning point (high or low), you find another one, although not necessarily of the same type. There are probably even more such relationships than just the ones shown here.

As we noted in the newsletter article, the 150-month period is related to a longer 393-month turning point pattern by virtue of the Fibonacci ratio. Multiply 150 times 2.618 and you get 393. Alternatively, if you multiply 393 by 0.382, you get 150. It works backwards and forwards.
This is all relevant at the moment because we are arriving at the 150 month anniversary of the 2002-2003 lows. The Internet bubble’s collapse led to a big decline in 2002, and to a bottom in October 2002. But worries about an impending war with Iraq kept prices down, and we got another low in March 2003. So which one do we count from?

That’s the hard question. Counting forward 150 months from October 2002 gets us to April 2015. And 150 months from March 2003 gets us to September 2015. Split the difference, and we have May to July 2015, and that’s right where we sit now.

Understand that the 150-month figure has to be taken with a tolerance of plus or minus 2 months. Life is just not as precise as we might all like. And it is not yet clear which of the bottoms in 2002-03 was the one that the market thinks is the right one from which to count forward. We’ll know for sure in a few months, but for now we have to allow for either possibility.

Expecting a major top in 2015 fits well with the leading indication from the eurodollar Commitment of Traders data, as I discussed in the May 7 Chart In Focus. That analysis says that the top should be in early August, but there can be a little bit of wiggle room. Watching for the more precise topping indications is something we will be taking up in both our twice monthly McClellan Market Report and in our Daily Edition.

Tom McClellan has done extensive analytical spreadsheet development for the stock and commodities markets, including the synthesizing of the four-year Presidential Cycle Pattern. He has fine tuned the rules for interrelationships between financial markets to provide leading indications for important market and economic data.

Tom is a graduate of the U.S. Military Academy at West Point where he studied aerospace engineering, and he served as an Army helicopter pilot for 11 years. He began his own study of market technical analysis while still in the Army, and discovered ways to expand the use of his parents’ indicators to forecast future market turning points. Tom views the movements of prices in the financial market through the eyes of an engineer, which allows him to focus on what the data really say rather than interpreting events according to the same "conventional wisdom" used by other analysts. In 1993, he left the Army to join his father in pursuing a new career doing this type of analysis. Tom and Sherman spent the next 2 years refining their analysis techniques and laying groundwork.

To subscribe to the free Chart in Focus service, visit McClellan Financial Publication by clicking here.
From my own research, I have learned that serendipity, the aptitude for making desirable discoveries by accident, can play a big part in making meaningful technical discoveries. One of the fantasies that every serious stock market technician has probably entertained is that there must be some kind of indicator that will signal us when a major market top is being formed. There are some effective indicators for identifying market bottoms, but because market tops tend to be more diffuse, often occurring at different times for different indexes, the search for an effective tool to identify major market tops has been, for the most part, a futile one.

In November 1992, I was struck by the apparent lack of volatility in the daily number of advancing and declining issues on the New York Exchange. Over a period of 21 trading days (the number of trading days in the average month), the highest single day closing advance/decline ratio (simply divide up stocks by down stocks on the New York Exchange) was 1.84 and the lowest was 0.71. At the time, it seemed that was a very small range for a full month of data, so I decided to research further. Rather than use the observed 1.84 and 0.71 limits as a precedent for further research, the range was arbitrarily widened somewhat to 0.65 and 1.95. The first search of the computer database attempted to find other time periods of 21 consecutive trading days when similar "churning" occurred, i.e. when the highest daily advance/decline ratio was below 1.95 and the lowest ratio over that period was above 0.65. That might give a clue as to whether the pattern was significant in any way. The initial research went back to 1966 when the Dow made its first move towards the 1000 level.

The results were stunning. Between 1966 and November 1992 when the pattern first caught my attention, a period of almost 27 years, there were only three other periods when the conditions for the pattern were satisfied.

It appeared as if technical gold had been struck. Within an average period of less than a month, the pattern had preceded three of the most important stock market tops of the past several decades. Equally as important, there were no other instances of the pattern over that 27 year period.

Over three decades of market research have made it clear that any pattern that appears to have predictive potential should be researched as far back as is practicable. Research of the period between 1940 to 1966 uncovered a total of nine "churning" patterns when the above conditions were satisfied, namely, the highest daily advance/decline ratio over a 21 day period was below 1.95 while the lowest ratio over that period was above 0.65. With the exception of the period...
from June 1963 to March 1965, the results were impressive, though not as uniformly dramatic as the post-1965 results noted above.

A market historian might note a remarkable commonality in all of the above periods. Almost without exception, each time the churning parameters were satisfied over a minimum of 21 trading days, the market was either at or very close to an all time high or a multi-year high. There is nothing apparent in the definition of the two limits required of the advance/decline ratio (greater than 0.65 but less than 1.95) over a one month period that would suggest such a result.

Enough data had now been compiled to formulate a general rule. The pattern would be dubbed, the "Sign of the Bear." There were three basic rules that were required to identify a "Sign of the Bear."

1) There must be a streak of 21-27 consecutive trading days where the daily advance/decline ratio remains above 0.65 but below 1.95.

2) That consecutive streak must end with a downside break, i.e. with an advance/decline ratio below 0.65.

3) The downside break in the streak must be confirmed with either a two day average advance/decline ratio or a three day average advance/decline ratio following the end of the streak being below 0.75.

What is the rationale that explains why the patterns defining a "Sign of the Bear" should result in major market tops? I believe that searching for 21 day periods without one daily ratio less than 0.65 would obviously direct the computer to periods of market strength, periods where the market went for at least a full month without a big down day. At the same time, the computer is directed to periods of investor complacency -a full month without a meaningful day of selling. Now add the requirement that there also be no daily ratio higher than 1.95 and the computer would be directed to periods of market strength and bullish sentiment, but not the kind of upside breadth (advance/decline ratios higher than 2-1) which is usually required to sustain a healthy market advance. Voila! It's just the combination that a technician might look for at a market top. The final requirement is one that almost all technicians learn sooner or later. Require confirmation of your pattern. Unless there is a sharp turnaround to the downside as required by rules number 2 and 3, the pattern might be relatively innocuous. Once that confirmation occurs, history tells us the market is in trouble.
Peter graduated from Harvard College and Boston University Law School and passed the Massachusetts Bar. In 1972, he began his financial career as a stock broker. He accepted the offer, and appeared as a stock market analyst on Los Angeles television station KWHY, the nation’s first financial TV station, for several years beginning in 1973. In July of 1975, Peter started publishing Stockmarket Cycles. Mr. Eliades was a regular weekly panelist on ABC Network’s weekly Sunday show, Business World in the 1990s, and has made frequent guest appearances on FNN, CNBC, Wall Street Week, Larry King Live, and Nightly Business Report.

He has been featured in some of the nation’s most prestigious publications including Barron’s, The Wall Street Journal, and Forbes among others. In recent years, Eliades has directed his attention to the development of trading systems, but has remained deeply involved with studying and developing technical indicators for analyzing the stock market.

For more information about Peter Eliades please visit Peter Eliades’ Stockmarket Cycles.
GLOBAL APPLICATION

“For me personally, the CMT is the most useful and practical study program for investment professionals among existing programs. The CMT Program turns quite a number of the classic forms of analysis upside-down. It is critically important that we look at things outside the box. That’s the value CMT education delivers.”

- Will W. Wang, CMT, CFA, CAIA
Director of Barclays Private Bank Advisory North Asia

JOBS ENHANCED BY THE CMT DESIGNATION:

Top 5 Occupations of CMT charterholders
(The remaining 26% of charterholders are distributed into over a dozen different job types each representing less than 5% of all CMT charterholders)

- Portfolio Manager: 25%
- Registered Investment Advisor: 15%
- Analyst: 13%
- Trader: 13%
- Strategist: 8%

Distinguish yourself with the skills to navigate the gap between intrinsic value and market price across all asset classes and liquid global markets.

Click Here to Register

Market Technicians Association

646-652-3300
go.mta.org/cmt
Editor’s note: many members seek answers to difficult career questions. Of course there are no easy answers for anything related to jobs in the current market but the MTA would like to offer some insights into different career strategies. Please send career questions to editor@mta.org and we will work with industry experts to find answers.

The MTA is a group of established professionals and professionals seeking new career opportunities. There are unlimited opportunities in the financial industry but the position of money manager or investment manager is often cited as a career objective. This job itself consists of many different opportunities. Investment managers can serve individual clients under a Registered Investment Adviser (RIA) structure. Managers might work for firms managing assets under a mutual fund or hedge fund structure. There are many other ways a member could find themselves managing money.

Just as there is no single job description for an investment manager, there is no single path to the investment manager career. All paths do share at least one trait – becoming an investment manager is a difficult process.

Each jurisdiction has different regulatory requirements for investment managers. In the United States, these requirements can vary by state. In other countries the requirements can vary by region or exchange. It is important to learn all legal requirements prior to accepting funds to manage.

Complying with all of the legal requirements can take time and might require the assistance of experts in legal and compliance issues. This can be an expensive process and there is no guarantee of success. Even after meeting all legal requirements there is no guarantee a manager will find clients.

There is at least one step you can take prior to completing the registration process that could help you obtain clients and that is to establish a track record.

Clients will generally want to know how a manager intends to manage their money. Some potential clients might want a detailed Investment Policy Statement while others will be satisfied with a brief description of the strategy. It seems safe to assume most potential clients will want to see performance results.

Some clients may accept hypothetical performance, especially if the manager relies on a model to dictate buy and sell decisions. Many clients will want to see actual performance, a requirement that can be a problem for aspiring investment managers who don’t have clients. Some due diligence teams will not consider managers without actual performance data. If a due diligence team asks for actual performance, they are unlikely to accept a spreadsheet with
your own calculations. Your calculations may well be accurate, but firms searching for investment managers need more verification.

One solution to the performance documentation problem is to provide verified performance data to prospective clients. This service can be provided by Theta Research.

Theta Research provides independent, third-party tracking of investment performance. This service could provide the performance track record needed to attract investors to a new money manager. The service could also supplement a resume for a job seeker and help that individual stand out from the crowd.

Theta Research receives data directly from brokerage firms and other custodians and is able to verify a manager’s track record on a daily or monthly basis, depending on data availability. The company collects investment account data from third-party sources and generates portfolio performance and risk characteristics for actively managed accounts. A sample of the reporting capability is shown below. In addition to standard reports, managers can view their percentile rankings relative to the rest of the models in the Theta database over various timeframes.
Sophisticated investors and institutional investors will rely on this type of data when making decisions about which managers to use. They might prefer seeing results from third parties because that is independent data. Theta Research provides independent data and also helps managers get their performance data in the hands of potential investors.

Theta publishes information on managers and their models on a daily basis allowing for the analysis of style, risk and performance. The company serves investment managers across the country and was one of the first to offer such firms the ability to document an actual track record based on actual trading information verified from third-party sources. Theta also allows managers the opportunity to invite prospects to Theta’s site to view their performance information exclusive of any other managers’ data.
Becoming a money manager is a difficult task. Independent verification of performance and marketing can provide an opportunity for those seeking to enter the business.

To assist members who are establishing a performance track record, Theta Research has agreed to discount their affordable service for MTA members. Theta is able to track the performance of a model being traded in an account at almost any brokerage firm or other custodian. Managers with several models will simply need to establish different accounts for each model to meet the requirements of many due diligence teams who will be unwilling to break out performance of multiple models in a single account. To learn more, click here.
Choosing the right Reward/Risk metric for your strategies.

Performance in terms of raw profit does not reveal all the aspects of a trading system and it is certainly not the best way to appraise it. The risk of the underlying strategy has to be regarded too. A very popular gauge, which describes the relation between return and risk is the Sharpe Ratio. This Trading Tip first describes the Sharpe Ratio and its drawbacks. Subsequently the Sortino Ratio is presented. Last but not least you will learn which of the two common gauges best reflects the system’s reward/risk.

THE SHARPE RATIO

Originated in 1966 by William F. Sharpe as a performance gauge for mutual funds the Sharpe Ratio is nowadays the industry standard for the evaluation and optimization of investments and trading systems. The formula is the excess return in relation to the standard deviation and describes the reward/risk of the underlying investment:

\[ \text{Sharpe Ratio} = \frac{R_{\text{ann}} - RF_{\text{ann}}}{\text{StDev}(R_{\text{ann}})} \]  

Example:

If an investment has an average annual profit of 10%, the annual risk-free interest rate is at 2% and the standard deviation of annual profits is 5% then the Sharpe Ratio equals:
Sharpe Ratio = (10% - 2%) / 5% = 1.6.

- The higher the Sharpe Ratio the better the Reward/Risk for the investment.

**NO DISTINCTION BETWEEN GOOD AND BAD VOLATILITY**

No matter how useful this formula is – there is a strong popular objection to the Sharpe Ratio as a global mean to gauge the risk-adjusted profitability of a trading system. The central point of this objection regards the use of standard deviation of all returns in the determination of risk: Using both positive and negative returns in the determination of risk, the Sharpe Ratio doesn’t separate “good” from “bad” volatility in performance although volatility which is generated by upward thrusts of the system’s profit curve is intuitively welcomed in contrast to volatility generated by downward thrusts of the curve.

As shown in figure 1, the left profit curve, for example, is seen as riskier than the right one according to the way the Sharpe Ratio perceives risk although intuitively the left curve is much more appealing.

![Figure 1: Equity Curves vs. Sharpe Ratio](image)

As a more sophisticated example, the Sharpe Ratio might see the same risk in a trend following type of system (which has many small loosing trades and a few amazingly profitable ones) and in a system which systematically shorts uncovered options thus having many small profitable trades and a few very large losses. The distribution of profits of the first system is usually **positively skewed** whereas the second system has usually a **negatively skewed** distribution (see figure 2).

But perhaps in the second system there may be much more hidden risk of losing capital due to the possibility of black swan events (sudden extremely rare unfavorable situation for the system).

---

1 Skewness is a measure of asymmetry for a distribution.
- The Sharpe Ratio defines risk as deviation of returns above or below their mean
- It appraises positively and negatively skewed distribution of returns the same way with respect to risk.

**THE SORTINO RATIO – THE DOWNWARD VOLATILITY DEFINES THE RISK.**

An alternative Reward/Risk metric to the Sharpe Ratio is the Sortino Ratio which separates upward volatility from downward one and it uses the latter to represent the system’s risk. The Sortino Ratio was created by Brian M. Rom in 1983 and it derives its name from Frank Sortino who advocated the use of only downside deviation from a desired minimum return as a proxy of risk. The typical discrete formula version of the annual Sortino Ratio commonly used is:

\[
\text{Sortino Ratio} = \frac{R_{\text{ann}} - R_{\text{RRRann}}}{\text{DownDev}_{\text{ann}}}
\]

- \( R_{\text{ann}} \) = annual percentage returns of an investment
- \( \bar{R}_{\text{ann}} \) = mean of \( R_{\text{ann}} \)
- \( R_{\text{RRRann}} \) = annual Required Rate of Return (minimum desired return from the investment, serves a similar purpose to the risk-free rate in Sharpe Ratio)
- \( \text{DownDev}_{\text{ann}} \) = annual Downside Deviation defined as:

\[
\text{DownDev}_{\text{ann}} = \sqrt{\frac{\sum_{i}^{n} \left[ \min \left( R_{\text{ann}} - R_{\text{RRRann}}; 0 \right) \right]^2}{n}}
\]

- \( n \) = number of annual returns (monthly Sortino ratios computed using monthly returns are also very common).
The Sortino Ratio perceives risk only as losses below a threshold and therefore it is focused on the risk of significant loss.

- The Sortino Ratio regards risk as deviation of returns only below a desired threshold called “Required Rate of Return” (or “Target Return”)
- It generally regards negatively skewed distribution of returns as more risky than the positively skewed ones

**THE ANNUALIZATION METHOD POSES PROBLEMS**

No matter if you use the Sharpe Ratio or the Sortino Ratio there are problems when it comes to annualization. When profits/losses for period other than yearly are given, a method known as the “square root rule” (multiplication by the square root of a number related to the period of returns) is usually applied to create the annualized Sharpe and Sortino ratios. For example, when daily equity curve for a system is used, an annualized Sharpe Ratio for the system could be:

\[
\text{Sharpe Ratio (Annualized)} = \sqrt{252} \cdot \frac{R_d - RF_{ann}}{StDev(R_d)}
\]

Where:
- \( R_d \) = daily percentage profit of the system’s equity curve
- \( StDev(R_d) \) = standard deviation of \( R_d \)
- \( \sqrt{252} \) factor annualizes the Sharpe Ratio

The problem is that due to various issues (some profound and some hidden) this annualization method has very serious problems and it doesn’t provide meaningful results. The annual Sharpe Ratio is usually way different from the annualized one provided by the square root rule. The same holds for the Sortino Ratio too. Annualization of both metrics therefore should be generally avoided.

**SHARPE VS. SORTINO – WHICH GAUGE IS THE BETTER CHOICE?**

What is a better Reward/Risk gauge to use when comparing trading systems? Well, even assuming that “risk” for you doesn’t just mean instability in performance but it means “risk of losing money”, the Sortino Ratio is not the definite answer to this question as the better gauge depends heavily on the systems’ goals and idiosyncrasy.
Suppose for example that you want to gauge the Reward/Risk profile of a system whose goal is to earn relatively steady profits over time. This means that the system is designed to crunch short term price moves and it doesn’t try to capitalize on extreme situations. As a consequence, any extremely profitable trade (although pleasant) is most probably attributed to good luck during for example a strong trend. Next time the same strong trend appears, the system may (due to bad luck, this time) have an opposite position thus producing a significant loss. In effect, high upside or downside volatility for the historical performance of this system is indicative of the system’s inability to stay away from extreme situations even though it is designed to avoid them. This is a case (and you will encounter many such cases when you perform optimization of a system’s parameters) where both high upside and high downside volatility in the historical performance of the system are not welcomed so the Sharpe Ratio is a better gauge of Reward/Risk than the Sortino Ratio for this system.

- The Sharpe Ratio should be preferred if the stability of the equity curve is the focus

On the opposite, consider a system which targets strong swift directional trends of the underlying and tries to capture as much profit as it can from them. In this case it is only the downside volatility in performance which determines the true risk of losing money for the system because high upside volatility is exactly what the system is trying to achieve. So, the Sortino Ratio is a better gauge in this case.

- The Sortino Ratio better suits to strategies which target high upside volatility of equity curve (like the trend following strategies).

CONCLUSION

This short explanation gave you the essential difference between the Sharpe and Sortino Ratio and it also gave you ideas regarding what to take into account before choosing the one ratio over the other to rank your trading systems

Giorgos Siligardos holds a PhD in Mathematics and a Market Maker certificate on derivatives from the Athens Exchange. He is a financial software developer and coauthor of academic books on finance. Giorgos has also been a research and teaching fellow to the University of Crete as well as a teaching fellow to the Department of Finance and Insurance at the Technological Educational Institute of Crete for many years teaching math and financial courses and supervising Masters dissertations. You may contact Giorgos at: giorgos.siligardos@intalus.com
Editor's note: In recent years, technical analysis has been a popular research topic. In this paper, the authors found that technical analysis can be used to generate profits in the markets. Among the papers published recently is A New Anomaly: The Cross-Sectional Profitability of Technical Analysis by Yufeng Han, Ke Yang and Goufu Zhou. The full paper is available at SSRN or by clicking here.

Abstract: In this paper, we document that an application of a moving average timing strategy of technical analysis to portfolios sorted by volatility generates investment timing portfolios that often outperform the buy-and-hold strategy substantially. For high volatility portfolios, the abnormal returns, relative to the CAPM and the Fama-French three-factor models, are of great economic significance, and are greater than those from the well known momentum strategy. Although both the moving average timing and momentum strategies are trend-following strategies, their performances are surprisingly uncorrelated and behave differently over the business cycles. In addition, the abnormal returns cannot be explained by market timing ability, investor sentiment, default and liquidity risks.

Introduction

Technical analysis uses past prices and perhaps other past data to predict future market movements. In practice, all major brokerage firms publish technical commentary on the market and many of their advisory services are based on technical analysis. Many top traders and investors use it partially or exclusively (see, e.g., Schwager, 1993, 1995; Covel, 2005; Lo and Hasanhodzic, 2009). Whether technical analysis is profitable or not is an issue discussed in empirical studies going as far back as Cowles (1933) who found inconclusive evidence. Recent studies, such as Brock, Lakonishok, and LeBaron (1992) and Lo, Mamaysky, and Wang (2000), however, find strong evidence of profitability when using technical analysis, primarily of using a moving average scheme, to forecast the market. More recently, Neely, Rapach, Tu and Zhou (2011) find that the stock market forecasting power of technical analysis is as good as using economic fundamentals. From a theoretical point of view, Zhu and Zhou (2009) demonstrate that technical analysis can be a valuable learning tool under uncertainty about market dynamics.

Our paper provides the first study on the cross-sectional profitability of technical analysis. Unlike existing studies that apply technical analysis to either market indices or individual stocks, we apply it to volatility decile portfolios, i.e., those portfolios of stocks that are sorted by their standard deviation of daily returns. There are three factors that motivate our examination of the volatility decile portfolios. First, we view technical analysis as one of the signals investors use to make trading decisions. When stocks are volatile, other signals, such as earnings and economic outlook, are likely to be
imprecise, and hence investors tend to rely more heavily on technical signals. Therefore, if technical signals are truly profitable, this is likely to show up for high volatility stocks rather than for low volatility stocks. Second, theoretical models, such as Brown and Jennings (1989), show that rational investors can gain from forming expectations based on historical prices and this gain is an increasing function of the volatility of the asset. Third, our use of technical analysis focuses on applying the popular technical tool, the moving averages, to time investments. This is a trend-following strategy, and hence the profitability of the strategy relies on whether there are detectable trends in the cross-section of the stock market. Zhang (2006) argues that stock price continuation is due to under-reaction to public information by investors, and investors will under-react even more in case of greater information uncertainty which is well approximated by asset volatility. Therefore, to understand the cross-sectional profitability of technical analysis, it is a sensible starting point to examine the volatility decile portfolios.

We apply the moving average (MA) strategy to 10 volatility decile portfolios formed from stocks traded on the NYSE/Amex by computing the 10-day average prices of the decile portfolios. For a given portfolio, the MA investment timing strategy is to buy or continue to hold the portfolio today when yesterday’s price is above its 10-day MA price, and to invest the money into the risk-free asset (the 30-day Treasury bill) otherwise. Similar to the existing studies on the market, we compare the returns of the 10 MA timing portfolios with the returns on the corresponding decile portfolios under the buy-and-hold strategy. We define the differences in the two returns as returns on the MA portfolios (MAPs), which measure the performance of the MA timing strategy relative to the buy-and-hold strategy. We find that the 10 MAP returns are positive and are increasing with the volatility deciles (except one case), ranging from 8.42% per annum to 18.70% per annum. Moreover, the CAPM risk-adjusted returns, or the abnormal returns, are also increasing with the volatility deciles (except one case), ranging from 9.34% per annum to 21.95% per annum. Similarly, the Fama-French risk-adjusted returns also vary monotonically (except one case) from 9.83% per annum to 23.72% per annum. In addition, the betas are either negative or negligibly small, indicating that the MAPs have little (positive) factor risk exposures.

How robust are the results? We address this question in four ways. First, we consider alternative lag lengths, of \( L = 20, 50, 100 \) and 200 days, for the moving averages. We find that the abnormal returns appear more short-term with decreasing magnitude over the lag lengths, but they are still highly economically significant with the long lag lengths. For example, the abnormal returns range from 7.93% to 20.78% per annum across the deciles when \( L = 20 \), and remain mostly over 5% per annum when \( L = 200 \). Second, we also apply the same MA timing strategy to the commonly used value-weighted size decile portfolios from NYSE/Amex/Nasdaq, which are a proxy of the volatility deciles. Excluding the

---

2 We obtain similar results with volatility deciles formed from stocks traded on the Nasdaq or NYSE, respectively.
3 These major results are replicated by a conference discussant, PhD students from top universities and practitioners around the world.
largest size decile or the decile portfolio that is the least volatile, we obtain similar results that, when \( L = 10 \), the average returns of the MAPs range from 9.82% to 20.11% per annum, and the abnormal returns relative to the Fama-French model range from 13.70% to 21.87% per annum. Third, we examine the trading behavior and break-even transaction costs. It turns out that the MA timing strategy does not trade very often and the break-even transaction costs are reasonably large. Finally, we assess the performance over subperiods and find that the major conclusions are unaltered.

The abnormal returns on the MAPs constitute a new anomaly. In his extensive analysis of many anomalies published by various studies, Schwert (2003) finds that the momentum anomaly appears to be the only one that is persistent and has survived since its publication. The momentum anomaly, published originally in the academic literature by Jegadeesh and Titman (1993), is about the empirical evidence that stocks which perform the best (worst) over a three- to 12-month period tend to continue to perform well (poorly) over the subsequent three to 12 months. Comparing the momentum with the MAPs, the momentum anomaly earns roughly about 12% annually, substantially smaller than the abnormal returns earned by the MA timing strategy on the highest volatility decile portfolio. Furthermore, interestingly, even though both the momentum and MAP anomalies are results of trend following, they capture different aspects of the market because their return correlation is low, ranging from -0.01 to 0.07 from the lowest decile MAP to the highest decile MAP. Moreover, the MAPs generate economically and statistically significant abnormal returns (alphas) in both expansion and recession periods, and generate much higher abnormal returns in recessions. In contrast, the momentum strategy fails to generate any risk-adjusted abnormal returns during recessionary periods. In short, despite the trend-following nature of both strategies, the MAP and momentum are two distinct anomalies. 4

To understand further the abnormal returns on the MAPs, we address two more questions. First, we analyze whether the strategy has any ability in timing the market, and whether there is still abnormal returns after controlling for this ability. We find that there is certain timing ability, but the abnormal returns remain after controlling for it. Second, we examine whether the abnormal returns can be explained by a conditional version of the Fama-French model (see, e.g., Ferson and Schadt (1996)). We find that returns on the MAPs are not sensitive to changes in investor sentiment and P´astor and Stambaugh (2003) liquidity factor, but have lower market betas in recessions and higher betas during periods with higher default risk. Nevertheless, the abnormal returns are robust, and remain statistically and economically significant.

The rest of the paper is organized as follows. Section II discusses the investment timing strategy using the MA as the timing signal. Section III provides evidence for the profitability of the MA timing strategy. Section IV examines the robustness of the profitability in a number of dimensions. Section V compares the momentum strategy and the MA

---

4 Han and Zhou (2011) explore how technical analysis can help to enhance the popular momentum strategy.
timing strategy over the business cycles and examines the sensitivity of the abnormal returns to economic variables. Section VI provides concluding remarks.

The Moving Average Timing Strategies

We use one set of 10 volatility decile portfolios and one set of 10 size decile portfolios in this paper. All of the data are readily available from the Center for Research in Security Prices (CRSP). More specifically, the first set is constructed based on the NYSE/Amex stocks sorted into ten groups (deciles) by their annual standard deviations estimated using the daily returns within the year.\(^5\) Once stocks are assigned to portfolios, portfolio index levels (prices) and daily returns are calculated via equal-weighting.\(^6\) The portfolios are rebalanced each year at the end of the previous year. The second set is the 10 value-weighted size decile portfolios sorted by firm size with stocks traded on the NYSE/Amex/Nasdaq. Similar to the volatility deciles, the size deciles are ranked using the firm size at the end of the previous year and rebalanced each year. The sample period for both the volatility decile portfolios and the size decile portfolios is from July 1, 1963 to December 31, 2009 to coincide with the Fama-French factors.

Denote by \(R_{jt}\) (\(j = 1, \ldots, 10\)) the returns on either of the two sets of decile portfolios, and by \(P_{jt}\) (\(j = 1, \ldots, 10\)) the corresponding portfolio prices (index levels). The moving average (MA) at time \(t\) of lag \(L\) is defined as

\[
A_{jt,L} = \frac{P_{jt-L-1} + P_{jt-L-2} + \cdots + P_{jt-1} + P_{jt}}{L},
\]

which is the average price of the past \(L\) days. Following, for example, Brock, Lakonishok, and LeBaron (1992), we consider 10-, 20-, 50-, 100- and 200-day moving averages in this paper. The MA indicator is the most popular strategy of using technical analysis and is the focus of study in the literature. On each trading day \(t\), if the last closing price \(P_{jt-1}\) is above the MA price \(A_{jt-1,L}\) we will invest in the decile portfolio \(j\) for the trading day \(t\), otherwise we will invest in the 30-day Treasury bill. So the MA provides an investment timing signal with a lag of one day. The idea of the MA is that an investor should hold an asset when the asset price is on an uninterrupted up trend, which may be due to a host of known and unknown factors to the investor. However, when the trend is broke, new factors may come into play and the investor should then sell the asset. Its theoretical reasons and empirical evidence will be examined in the next section.

Mathematically, the returns on the MA timing strategy are

---

\(^5\) In CRSP, portfolio (decile) one contains the stocks with the highest standard deviation. We follow the convention of published studies on sorted portfolios by reversing the order, so our portfolio (decile) one contains the stocks with the lowest standard deviation.

\(^6\) CRSP does not have value-weighted volatility decile portfolios while the value-weighting is an interesting alternative, which is the reason we also analyze the value-weighted size decile portfolios below.
where \( R_{jt} \) is the return on the \( j \)-th volatility decile portfolio on day \( t \), and \( r_n \) is the return on the risk-free asset, the 30-day Treasury bill. Similar to existing studies on the performance of the market timing strategy relative to the buy-and-hold strategy of the market portfolio, we focus on the cross-sectional profitability of the MA timing strategy relative to the buy-and-hold strategy of the volatility decile portfolios. In other words, we focus on how \( \bar{R}_{jt,L} \) outperforms \( R_{jt} \); that is, we will be interested in the difference \( \bar{R}_{jt,L} - R_{jt} \). Because the performance of this difference depends on the usefulness of the MA signal, we call the difference the return on the MA portfolio (MAP). With the 10 decile portfolios, we thus obtain 10 MAPs,

\[
\text{MAP}_{jt,L} = \bar{R}_{jt,L} - R_{jt}, \quad j = 1, \ldots, 10.
\]  

A MAP can also be interpreted as a zero-cost arbitrage portfolio that takes a long position in the MA timing portfolio and a short position in the underlying volatility decile portfolio. The abnormal performance of the MAPs indicate the profitability of the MA investment timing strategy.

**Profitability of the Moving Average Portfolios**

In this section, we provide first the summary statistics of the volatility decile portfolios, the 10-day MA timing portfolios, and the corresponding MAPs, and then the alphas (abnormal returns) of the MAPs, which reveal strong evidence of the cross-sectional profitability of the MA timing strategy. Finally, we explore some explanations for the profitability.

**Summary Statistics**

Table I reports the basic characteristics of the returns on the decile portfolios, \( R_{jt} \), the returns on the 10-day MA timing portfolios, \( \bar{R}_{jt,10} \), and the returns on the corresponding MAPs, \( \text{MAP}_{jt,10} \).
Panel A provides the average return, the standard deviation, the skewness, and the Sharpe ratio of the buy-and-hold strategy across the ten volatility deciles. The returns are an increasing function of the deciles, ranging from 10.81% per annum for the lowest decile to 44.78% per annum for the highest decile.\(^7\) The last row in the table provides the difference between the highest and the lowest deciles. Similarly, the MA timing portfolios, reported in Panel B, also have returns varying positively with the deciles, ranging from 19.22% to 60.51% per annum.\(^8\) In addition, the returns on the MA timing portfolios not only are larger than those on the decile portfolios, but also enjoy substantially smaller standard deviations. For example, the standard deviation is 4.16% versus 6.82% for the lowest decile, and 14.41% versus 20.29% for the highest decile.

\(^7\) Ang, Hodrick, Xing, and Zhang (2006) document a negative relation between lagged idiosyncratic volatility and future returns, while Han and Lesmond (2011) argue that the negative relation is due to liquidity bias in the estimation of idiosyncratic volatility, and Huang, Liu, Rhee, and Zhang (2009) argue that the negative relation is due to return reversal. However, positive contemporaneous relation between stock returns and volatilities (on both the aggregate market and individual stock level) has been supported by both theory (e.g. Merton, 1973, 1987; Malkiel and Xu, 2004) and empirical evidence (e.g. Lehmann, 1990; Malkiel and Xu, 2004; Spiegel and Wang, 2005; Ghysels, Santa-Clara, and Valkanov, 2005; Fu, 2009).

\(^8\) To put the performance of the volatility decile portfolios and MA timing portfolios in perspective, the equal-weighted NYSE/Amex index has an average return of 17.45% per annum, and a standard deviation of 13.53% per annum in the same period. Therefore, even the lowest decile of the MA timing portfolios earns higher returns than the equal-weighted index, while the returns of the lowest four volatility deciles are lower than those of the index. The standard deviation of all the MA timing portfolios is also smaller than that of the index except for the highest decile.
for the highest decile. In general, the MA timing strategy yields only about 65% volatility of the decile portfolios. As a result, the Sharpe ratios are much higher for the MA timing portfolios than for the volatility decile portfolios, about four times higher in general. Furthermore, while the volatility decile portfolios display negative skewness (except for the highest volatility decile), the MA timing strategy yields either much smaller negative skewness or positive skewness across the volatility deciles. Panel C reports the results for the MAPs. The returns increase monotonically from 8.42% to 18.70% per annum across the deciles (except for the highest volatility decile). While the standard deviations are much smaller than those of $R_{jt}$ in the corresponding deciles, they are not much different from those of $\bar{R}_{jt,L}$. However, the skewness of the MAPs across all deciles is positive and large. In the last column of Panel C, we report the success rate of the MA timing strategy, which is defined as the fraction of trading days when the MA timing strategy is on the “right” side of the market, i.e., it is out of the market when the decile returns are lower than the risk-free rate; it is in the market when the decile returns are higher than the risk-free rate. The success rate is about 60% across the deciles, indicating good timing performance of the MA timing strategy.

The simple summary statistics clearly show that the MA timing strategy performs well. The MA timing portfolios outperform decile portfolios with higher Sharpe ratios by having higher average returns and lower standard deviations. Furthermore, the MA timing portfolios have either less negative or positive skewness, and in particular the MAPs all have large positive skewness and above 50% success rates, which suggests that more often than not the MA timing strategy generates large positive returns. However, it is unclear whether the extra returns can be explained by a risk-based model. This motivates our next topic of examining their portfolio return differences, the MAPs, in the context of factor models.

*Editor’s note: additional tests and statistics are found in the paper. They support the conclusion are omitted for brevity.*

**Concluding Remarks**

In this paper, we document that a standard moving average of technical analysis, when applied to portfolios sorted by volatility, can generate investment timing portfolios that outperform the buy-and-hold strategy greatly, with returns that have negative or little risk exposures on the market factor and the Fama-French SMB and HML factors. Especially for the high volatility portfolios, the abnormal returns, relative to the CAPM and the Fama and French (1993) three-factor models, are high, and higher than those from the momentum strategy. While the moving average strategy is a trend-following one similar to the momentum strategy, its performance has little correlation with the momentum strategy, and behaves differently over business cycles. Furthermore, the abnormal returns are not sensitive to changes in investor sentiment, default and liquidity risks.
Our study provides new research avenues in several areas. First, our study suggests that it will be likely fruitful to examine the profitability of technical analysis in various markets and asset classes by investigating the cross-sectional performance, especially focusing on the role of volatility. Given the vast literature on technical analysis, potentially many open questions may be explored and answered along this direction. Second, our study presents an exciting new anomaly in the finance literature. Given the size of the abnormal returns and the wide use of technical analysis, explaining the moving average anomaly with new asset pricing models will be important and desirable. Thirdly, because of its trend-following nature, various investment issues that have been investigated around the momentum strategy can also be investigated with the moving average strategy. All of these are interesting topics for future research.

References are available in the original document which is available at SSRN or by clicking here.
The MTA recently licensed the CFA Institute *Standards of Practice Handbook*. This license allows MTA members to access the detailed standards developed by the CFA Institute over many years. The *Handbook* could serve as a guide to best practices for finance professionals.

As an example, under the Standards of Professional Conduct, members owe certain duties to clients. These duties include:

- Loyalty, prudence, and care
- Fair dealing
- Suitability
- Fair accurate, and complete performance presentation
- Preservation of confidentiality

The *Standards of Practice Handbook* provides additional details on the meaning of these duties, case studies to assist in understanding and studying the standards and examples that clarify how to implement the standards on the job.

Members also owe certain duties to employers. These duties include:

- Loyalty
- Disclosure of additional compensation arrangements and the avoidance of a conflict of interest under any additional compensation agreement
- A responsibility to make reasonable efforts to detect and prevent violations of laws, regulations and ethical standards by anyone under their supervision

These responsibilities to clients and employers are independent of each other but they can also be related to each other.

Expanding on the duty to preserve client confidentiality, the *Handbook* explains members “must keep information about current, former, and prospective clients confidential unless: (1) the information concerns illegal activities on the part of the client; (2) disclosure is required by law; or (3) the client or prospective client permits disclosure of the information.

Even well-intentioned disclosures would violate the standard. For example, a member might be an investment adviser who receives a call from a client saying his accountant recommends making a $50,000 charitable donation to reduce income taxes. The client is seeking help identifying securities that could be sold to maximize the tax benefit. Now, suppose the adviser is on the board of directors of a nonprofit organization working to reduce homelessness in her local community. She knows the nonprofit organization could benefit from a gift of $50,000 and considers calling the organization’s development director with a suggestion to solicit a gift from her client. That would be a violation of the
Standards of Professional Conduct because the member would be revealing confidential client information. There is no exception to the Standard for charitable causes.

Members also need to respect client confidentiality when switching jobs.

Remember that members owe a duty of loyalty to their employers. Consider the case of a member who is leaving one firm to pursue a similar opportunity at another firm. Before leaving her current position, the member cannot solicit clients to become customers of her new firm. She cannot solicit prospective customers either because that would violate the Standard requiring her to act with loyalty to her employer’s interests. Soliciting current and prospective clients prior to leaving a position for a new one is unethical and a violation of the Standards.

But, what about after you start that new job? Is it ethical to contact former clients that you know well to request they become customers of your new firm?

Client records are the property of the firm. Contacting former clients through client lists or other information taken from a former employer would be a violation of the standard requiring loyalty to your employer. However, it is possible under some conditions to solicit former clients without violating the Standards of Professional Conduct.

As the Standards of Practice Handbook explains:

Simple knowledge of the names and existence of former clients is not confidential information, just as skills or experience that an employee obtains while employed are not “confidential” or “privileged” information. The Code and Standards do not impose a prohibition on the use of experience or knowledge gained at one employer from being used at another employer. The Code and Standards also do not prohibit former employees from contacting clients of their previous firm, in the absence of a noncompete agreement. Members and candidates are free to use public information about their former firm after departing to contact former clients without violating Standard IV(A), Duties to Employers: Loyalty.

The bottom line is that, in the absence of a noncompete agreement, as long as the member maintains her duty to loyalty to her former employer, does not take steps to solicit clients prior to leaving her former employer, and does not make use of material from the former employer without its permission after leaving there is no violation of the Code and Standards.

This example illustrates how ethics are a practical problem for members to consider. The example also illustrates the value of the resources provided under the recent licensing agreement.

You can download a copy of the latest edition of the Standards of Practice Handbook by clicking [here](#).
Why are Financial Professionals all over the world switching to Market Analyst?

market intelligence made easy

www.mav7.com/mta
Relative Rotation Graphs (RRGs) can be applied in any timeframe and are a versatile trading tool. RRGs can be used to scan on a universe to show those that change quadrants, or have changed direction. The chart below shows the S&P1500 companies that crossed or are about to cross into the Leading quadrant on a weekly basis. This chart was created on Monday, June 29, after global markets fell sharply in reaction to news about Greece.

The next chart shows Russell 2000 companies more than 3 standard deviations away from the benchmark using daily data. This chart demonstrates how RRGs can be combined with price-based indicators to visually present information from scans.
RRGs can also be applied to other market. The last chart uses intraday, 60-minute data on Forex markets with the US Dollar as the benchmark.

To learn more about RRG, you can watch the free education video at Market Analyst by clicking [here](#).