LETTER FROM THE EDITOR

Technical analysis has always been focused on the application of knowledge. In the early editions of Edwards and Magee’s *Technical Analysis of Stock Trends*, they focused on how to trade chart patterns. But these pioneers of the field also included a theory explaining why the pattern should work.

While applying the ideas of technical analysis is still the important consideration to practitioners, many academic researchers are working to uncover why the techniques work. In this month’s newsletter, we provide articles highlighting both the application of technical analysis and the research that technical analysis is stimulating in the academic community.

This month’s newsletter also includes a summary of Tom Dorsey’s presentation at the Annual Symposium. The Symposium truly does provide a year’s worth of ideas and we will be presenting summaries of those ideas in the months ahead. Videos of this year’s presentations and the previous four years are available at [http://symposium.mta.org/](http://symposium.mta.org/) and can be viewed at anytime.

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](mailto:editor@mta.org).

Sincerely,

Michael Carr
Tom Dorsey opened the 2015 Annual Symposium with a presentation on the process that helped him build a $6 billion asset management firm. The complete presentation is available at the MTA’s Knowledge Base, the web’s free repository for everything related to technical analysis.

Tom explained how Dorsey Wright and Associates (DWA) has always focused on the price of a security because it is the ultimate measure of supply and demand in the marketplace. DWA used tools including relative strength and point and figure charting to cut through the clutter of day-to-day market action. These simple tools help identify meaningful patterns in daily share price movements. The same tools, with the same rule set, can be applied at the country, sector, or individual share level, and across a variety of asset classes.

His epiphany, the realization that supply and demand are all that matter for stock picking, came from the book How to Use the Three-Point Reversal Method of Point & Figure Stock Market Trading by A. W. Cohen. He paused immediately after he read a paragraph that explained how the stock market works:

> The basic premise of P&F charting and trading is that the Law of Supply and Demand, and nothing else, governs the price of a stock. When Demand exceeds Supply, the price of a stock goes up; when Supply exceeds Demand, the price of a stock goes down. When Supply and Demand are contesting for supremacy, the price of a stock moves sideways.

This is a simple idea but in the right hands it is a powerful idea. After reading that book, Tom decided he would master P&F charting and this would be his key to success. He founded his firm in 1987 and began explaining P&F techniques to anyone who would listen. In October 1987, the stock market crashed, falling more than 20% in one day. P&F charts had warned DWA analysts of market weakness and Tom had positioned his clients defensively based on the NYSE Bullish Percent Index.
After the crash, Tom reinvented the firm. Prior to the crash he had focused on options. Since options were perceived as a driving factor behind the crash, he understood options would never be the same and he shifted the firm’s focus to technical analysis. At the Symposium, he used a chart to illustrate this reinvention.
Tom believes it is important to recognize what potential clients need and offer them exactly what they need as the need develops. His business philosophy is also based on the Law of Supply and Demand. His business success is partly due to his ability to recognize changes in demand and meet the new demand with a supply of services.

In 1987, with a new focus on technical analysis, the firm was able to expand into commodity research and was able to obtain additional customers. As technical analysts, the firm focused on trading. But once again, Wall Street was changing with the introduction of WRAP accounts and 401k plans. WRAP accounts shifted the focus from generating trading commission to generating revenue from assets under management. Wall Street’s shift led to changes in the business. To adapt, DWA began creating technical analysis-based, rules-driven, auto-managed models relying on relative strength.

In more recent years, DWA saw the trend was changing in mutual funds and ETFs. That trend can be seen in the chart below. Analysts expect assets in ETFs to surpass assets in mutual funds by 2027. Wanting to be ahead of the curve, by 2002, DWA had created its first model for iShares ETFs. By 2007, DWA launched the first technical analysis-based ETF, The Dorsey Wright Technical Leaders ETF (PDP). By March 2015, the firm was providing the index underlying 17 ETFs.

![Mutual Funds vs ETFs](image)

As US Mutual Fund total asset growth reach “maturity”, the trajectory of asset growth in ETFs offers a different projection.

Tom focused the ETFs on technical analysis and relative strength because DWA has long relied on relative strength, a logical approach to determining whether the forces of Supply or Demand are greater. The next chart illustrates the rationale behind the success of relative strength.
Using logical approaches to the market, DWA has been able to develop models that are rules-based and can be implemented by financial advisers or his firm through ETFs. Of course results are important and the results of his relative strength strategies have beaten buy and hold strategies over the long term.

For example, the easiest way to manage a 401k is to rank the available investments quarterly and buy the top 5 performers. This calculation could be done once a quarter. Tom calls this the “people’s strategy” because it can be done by anyone. The results show this strategy works well. It can also be improved upon with more complex calculations like the DWA Matrix. The DWA Matrix creates and organizes relative strength charts for all stocks relative to all other stocks. For the S&P 500, the matrix requires 250,000 charts.
Tom has always provided the rules and data to implement his strategies to his clients. He doesn’t worry about clients using his theories and ignoring his service. As he noted, "People don’t want to buy a quarter-inch drill. They want a quarter-inch hole!" With ETFs, DWA provides the holes the client actually wants.

Tom Dorsey co-founded Dorsey, Wright & Associates in 1987 and continues to serve as President. Mr. Dorsey is the author of Point & Figure Charting: The Essential Application for Forecasting and Tracking Market Prices, Thriving as a Broker in the 21st Century and Tom Dorsey’s Trading Tips: A Playbook for Stock Market Success. He has been a regular guest on Fox’s Cavuto on Business and Bulls & Bears programs, and frequently speaks to audiences worldwide on topics related to the stock market, technical analysis, and relative strength investing. Mr. Dorsey is a recipient of the Wharton School of Finance Securities Industry Associations Distinguished Speaker Award. He was also named Alumni of the Year 2000 for Virginia Commonwealth University and was granted the Citizens Community Award from Governor Charles Robb.
Editor’s note: In an article by Oliver Renick, Bloomberg recently featured the work of Dr. Edward J. Zychowicz which demonstrated the value of technical analysis. The original article is available at Bloomberg.com.

The Bloomberg article began with an oft-repeated criticism of technical analysis:

“To critics, technical analysis is snake oil, purporting to find order in markets when none exists. New research says using charts as the basis for trading decisions actually works -- when investors are at their least rational.

In a study titled “Sentiment and the Effectiveness of Technical Analysis,” researchers found that hedge funds that leaned on technical analysis beat their peers by an average of 5.3 percent per year during stretches when investor optimism was elevated. One reason: price momentum overwhelms influences like earnings and the economy in times of market euphoria.”

The study has been accepted for publication in the Journal of Financial and Quantitative Analysis. According to David Smith, one of the authors of the study, insights can be drawn from charts when investors are acting irrationally. Smith is a professor of finance at Albany’s School of Business and Center for Institutional Investment Management. He coauthored the study with Hofstra professors Edward Zychowicz and Na Wang and State University of New York at Albany professor Ying Wang.

The study was recently summarized in a presentation by MTA member Dr. Edward J. Zychowicz. Below is an extract from that presentation.

Many people use technical analysis and it has been around for a long time but technical analysis should not be useful in an efficient market. Tests of technical analysis have been mixed; variously showing that it does not beat buy and hold strategies, works sometimes or has some predictive power. But it is important to remember that tests of the usefulness of technical analysis are a challenge since there are so many ways to do it in terms of approaches, indicators and rules and almost unlimited combinations thereof. It’s possible that technical analysis does work in skillful hands during periods when the market is not efficient.

In this study, we introduced an approach to test for the usefulness of technical analysis when used by sophisticated investors during periods of sentiment-induced market inefficiency. This approach is important from at least two perspectives. First, it is an indirect, but realistic way to test for the usefulness of technical analysis while circumventing the empirical challenge of examining specific rules in isolation. The possible number and combinations of indicators
comprising a trading or investment system are virtually unlimited and proprietary to hedge funds, making it challenging to conduct convincing empirical tests of the effectiveness of technical analysis. Second, we focus on the use of technical analysis by perhaps the most elite, highly skilled, motivated, and rational group of investors. If there is a non-naive class of technical analysis users that can effectively navigate the complexities involved in profitably applying technical approaches, it would be hedge funds.

Introduction

In an efficient market, prices are determined solely by expected future cash flows discounted using an appropriate risk-adjusted interest rate. Technical analysis, which largely focuses on analyzing price action, would not be useful, since asset prices already reflect all information. More recent theories such as noise trader models (DeLong, Shleifer, Summers, and Waldmann (1990)), however, suggest that technical trading strategies may be profitable under uncertainty due to the presence of irrational noise traders (Zhu and Zhou (2009)).

The empirical evidence is also mixed and inconclusive as to whether technical approaches can generate superior performance (see Park and Irwin (2007) for an extensive survey of the profitability of technical trading strategies).

A growing body of literature contends that sentiment could drive asset mispricing (Baker and Wurgler (2006) and Shleifer and Summers (1990)), and that the sentiment-induced mispricing may be asymmetrical between high- and low-sentiment environments due to short-sale constraints (Stambaugh, Yu, and Yuan (2012) and Shen and Yu (2014)). Specifically, during high sentiment periods, the optimistic views of not-fully-rational investors tend to drive security overpricing, and rational investors cannot eliminate this overpricing due to impediments to short selling. Since market efficiency has important implications for the usefulness of technical analysis, it is interesting to investigate whether, and (if so) how, investor sentiment is related to the efficacy of technical analysis.

A challenge to test such an assertion is that technical analysis has virtually an unlimited number of indicators, rules and approaches. This has also challenged past tests of technical analysis. We present a unique test of the effectiveness of technical analysis in different sentiment periods by focusing on its usage by the most sophisticated astute class of investors, namely hedge fund managers.

We use a sample of hedge funds from the Lipper Tass database from 1994-2010 that are self-reported users or nonusers of technical analysis, and compare the relative benefits of technical analysis users versus nonusers in different sentiment periods. This sample included more than 5,000 funds. Sentiment was measured with the Baker-Wurgler index of market sentiment.

The Baker-Wurgler index of market sentiment is based on six indicators:
Main Findings

We first document that among our sample hedge funds, technical analysis users on average significantly outperform nonusers in high sentiment periods; however, in low sentiment periods, the use of technical analysis is found to be less valuable and even counterproductive. In addition, technical analysis usage is associated with lower fund risk, and this benefit is more prominent in high sentiment periods, indicating that technical analysis is an effective risk management tool. Finally, we show that only during high sentiment periods, technical analysis users exhibit better market timing ability than nonusers.

Funds using technical tools gained an average of 0.39% when sentiment was above average. Funds that didn’t use technical tools lost an average of 0.06% during that time. When sentiment was below average, funds using technical tools lagged non-users by an average of 0.2% per month.

Overall, we document the relative advantages of using technical analysis by hedge funds during high sentiment periods when market mispricing is most acute. Our results are robust to controlling for fund characteristics and various fixed effects, a subperiod analysis, and the use of pre-fee returns, different volatility periods, the sentiment level, and equity-focused hedge funds.

We also find that hedge funds that report using fundamental analysis tend to underperform nonusers in high sentiment periods; however, there exists some evidence that fundamental analysis users outperform nonusers in low sentiment periods. Hence, while technical analysis proves to be relatively more useful to exploit the more prominent overpricing occurred during high sentiment periods, fundamental analysis tends to be more effective in low sentiment periods.

Why is technical analysis relatively more useful to exploit high-sentiment induced market inefficiency?

First, we consider the information diffusion model which recognizes differences in the time for investors to receive information. Under this friction, technical analysis is useful for assessing whether information has been fully incorporated into prices, and past prices and trading volume can provide useful information for investors to make better price inferences. (See, e.g., Treynor and Ferguson (1985), Brown and Jennings (1989), Grundy and McNichols (1989), and
Blume, Easley, and O'Hara (1994)). Thus, technical analysis users can profit from the gradual information diffusion process in high sentiment periods when information is incorporated into prices at a slower rate due to short-sale constraints.

Second, stock markets tend to show trending patterns due to the underreaction and overreaction of investors with incomplete information (Hong and Stein (1999)). Insofar as markets exhibit stronger trends in high sentiment periods, technical analysis techniques such as moving average and momentum strategies are informative because they are primarily designed to detect price trends (See, for example, Han, Yang, and Zhou (2013) and Antoniou et al. (2013)).

Finally, the model in Zhu and Zhou (2009) shows that technical analysis can add value to asset allocation under uncertainty about predictability or uncertainty about the true model governing stock prices. These uncertainties are more likely in the presence of many noise traders with irrational sentiment who can cause prices to deviate from their fundamentals due to limits to arbitrage (DeLong et al. (1990)).

Empirically, there also exists evidence suggesting that technical analysis is relatively more effective during periods of high sentiment. For instance, Neely, Rapach, Tu, and Zhou (2014) show that technical indicators are more useful in detecting market declines near business cycle peaks (i.e., following high sentiment), but not as effective as macroeconomic variables in picking up market rises near business-cycle troughs (i.e., following low sentiment).

On a related note, Shen and Yu (2014) document that pervasive macro-related factors are priced in the cross section of stock returns following low sentiment, but not following high sentiment. This evidence supports our findings that fundamental variables, including macroeconomic indicators, tend to be more useful during low sentiment periods.

We contribute to the debate on the value of technical analysis from a new perspective by examining how investor sentiment affects the effectiveness of technical analysis as a general investment tool in the hands of sophisticated hedge fund managers.

There are practical implications of this research for traders, portfolio managers, and investors. In particular, our findings can help traders and portfolio managers identify sources of alpha and decide when to implement technical analysis. For investors who have not recognized the varying benefits of technical analysis in diverse sentiment periods, our findings highlight the importance of tailoring analytical approaches to market regimes and rotating between technical and fundamental analysis in different sentiment periods.
Our Conclusion

“Observing correctly that the market was frequently efficient, they [academics, investment professionals and corporate managers] went on to conclude incorrectly that it was always efficient. The difference between the propositions is night and day.”

---Warren Buffett

Technical analysis in the skillful hands of hedge funds during sentiment-induced periods of market inefficiency has value. During periods of relative market efficiency the value is less. The practical implication is that a rotating strategy of emphasis on technical and fundamental analysis contingent on the market environment may be worth exploring.

Dr. Edward Zychowicz earned a BA in economics from the Maxwell School of Citizenship and Public Policy at Syracuse University, and MA and PhD degrees in economics and finance from SUNY-Binghamton. Since joining the faculty of the Frank G. Zarb School of Business, Dr. Zychowicz has taught a wide range of finance courses at the undergraduate, graduate and executive MBA levels. He has served as faculty advisor to student organizations such as the FMA (Financial Management Association) and the GFA (Graduate Finance Association), and has served as faculty mentor to students participating in competitions such as the CFA Institute Global Investment Research Challenge and the Adirondack Cup. He is also a faculty inductee of the Beta Gamma Sigma Honor Society. His current research interests focus on behavioral finance, technical analysis, socially responsible investing and sustainability. Dr. Zychowicz has had his research accepted for publication in journals such as the Journal of Financial and Quantitative Analysis, Journal of Banking and Finance, Journal of Financial Research, Financial Review, Journal of Business Finance and Accounting, Journal of Economics and Business, and the International Journal of Intelligent Systems in Accounting, Finance and Management. He is a holder of the Chartered Financial Analyst (CFA) and Chartered Market Technician (CMT) designations. Dr. Zychowicz is a past Chairperson of the Department of Finance and currently serves as Co-Director of the Center for International Financial Services and Markets.
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The Charles H. Dow Award is presented annually for outstanding research in technical analysis. The 2014 winners, Michael Gayed, CFA, and Charles Bilello, J.D., CPA, CMT, demonstrated research can be put to practical use. They have used the analysis presented in their paper to manage mutual funds and separately managed accounts. They have now created an index to track the results of their analysis.

Pension Partners, LLC, recently announced the launch of the Beta Rotation Index (Ticker: BETAEQ), using the strategy outlined in their 2014 Charles H. Dow Award winning paper "An Internarket Approach to Beta Rotation." Pension Partners developed the index in partnership with S&P Dow Jones Indices LLC and the index will be independently calculated by S&P Dow Jones Indices.

The Beta Rotation Index is a total return index that measures the hypothetical performance of an equity rotation strategy. Using the signaling power of Utilities outlined in the Dow Award-winning paper, the Beta Rotation Index rotates fully between three defensive S&P 500 sector indices (S&P 500 Utilities Index, S&P Consumer Staples Index, and S&P 500 Health Care Index) and the S&P 500 Index.

Following this methodology, an investor would have significantly outperformed major global stock market averages. The results of the methodology are shown below with back-tested results prior to March 14, 2015.

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<tr>
<td>Annualized Return (%)</td>
<td>12.5%</td>
<td>9.8%</td>
<td>9.2%</td>
<td>4.9%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Standard Deviation (%)</td>
<td>13.3%</td>
<td>14.4%</td>
<td>19.1%</td>
<td>17.1%</td>
<td>23.2%</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>0.72</td>
<td>0.46</td>
<td>0.32</td>
<td>0.11</td>
<td>0.22</td>
</tr>
<tr>
<td>Alpha (%) vs. S&amp;P 500</td>
<td>4.3%</td>
<td>0.0%</td>
<td>-0.9%</td>
<td>-4.1%</td>
<td>-2.2%</td>
</tr>
<tr>
<td>Beta to S&amp;P 500</td>
<td>0.78</td>
<td>1.00</td>
<td>1.06</td>
<td>0.88</td>
<td>1.09</td>
</tr>
<tr>
<td>Max Drawdown(%)</td>
<td>-43.9%</td>
<td>-51.0%</td>
<td>-52.9%</td>
<td>-56.3%</td>
<td>-61.5%</td>
</tr>
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Following the rules detailed in the paper would have generated significant alpha with low beta, an ideal outcome for most investors. Many individual investors have difficulty visualizing what “high alpha, low beta” truly means. To help visualize the results, the next chart shows that a $10,000 hypothetical investment in the index at inception would have grown to more than $200,000 while that same investment in the S&P 500 would be worth just over $100,000.
The Beta Rotation Index will remind investors that long-term wealth generation does not have to be the result of taking on more risk. Wealth can be generated by taking less risk at the right time. The Index will also serve as a signal for investors showing times when volatility in equities is likely to rise, particularly when the index is up more/down less than the broader S&P 500 Index.

For more information about the index, please download the fact sheet at PensionPartners.com.

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How would you describe your job?

I am working as a Technical Strategist in the Private Banking & Wealth Management division of Credit Suisse. My main task is to deliver a technical view on all asset classes to the Credit Suisse Investment Committee. Furthermore, I publish regularly technical views in various Credit Suisse Investment Strategy publications and I also communicate the technical views directly to Credit Suisse clients and relationship managers through presentations or conference calls.

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

One of the main advantages of Technical Analysis is that you can apply it to basically all asset classes. So I analyze Equities, Fixed Income, Commodities and Forex on a regular basis.

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

I deliver a pure technical view to the Credit Suisse Investment Committee. The Investment Committee then defines the so-called "house view", which also takes into account fundamental and quantitative analysis. However, my own work is purely based on technical analysis.

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

I would recommend to first quickly grow accustomed to the various technical indicators and methods of technical analysis that are used in the industry. The CMT education program therefore offers an excellent starting point. Later on, I would recommend becoming more specialized on a method that seems to deliver good results and always try to communicate your analyst view as simple and clear as possible to your clients.

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

I recently finished reading "Trend Following with Managed Futures" by Alex Greyserman and Kathryn M. Kaminski. As a Technical Strategist, your main task is to get the trend right and the book offered some interesting conclusions about how successful trend following strategies in certain time periods can be, as for example the concept of the crisis alpha.

What research area do you think offers the greatest potential in technical analysis at this time?
I believe there is no such thing as the "perfect indicator". There will always be periods of time one indicator struggles. As a consequence, I prefer using a multiple-time frame momentum approach, combined with trend and chart pattern analysis.

Pascal Zingg is working as a Technical Strategist within the Private Banking & Wealth Management division of Credit Suisse, where he delivers a technical analysis input on all asset classes to the Credit Suisse Investment Committee. He joined Credit Suisse in 2004 and has several years of experience in trading multiple asset classes and technical analysis. He holds a B.Sc. in Business Administration from Bern University of Applied Sciences, as well as the CMT, CFTe and CAIA designations.

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.

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Editor’s note: This article is an extract of a paper originally published at the MIT web site. All references and additional support for the ideas tested can be found in the original.

Abstract

Stop-loss rules—predetermined policies that reduce a portfolio’s exposure after reaching a certain threshold of cumulative losses—are commonly used by retail and institutional investors to manage the risks of their investments, but have also been viewed with some skepticism by critics who question their efficacy. In this paper, we develop a simple framework for measuring the impact of stop-loss rules on the expected return and volatility of an arbitrary portfolio strategy, and derive conditions under which stop-loss rules add or subtract value to that portfolio strategy. We show that under the Random Walk Hypothesis, simple 0/1 stop-loss rules always decrease a strategy’s expected return, but in the presence of momentum, stop-loss rules can add value. To illustrate the practical relevance of our framework, we provide an empirical analysis of a stop-loss policy applied to a buy-and-hold strategy in U.S. equities, where the stop-loss asset is U.S. long-term government bonds. Using monthly returns data from January 1950 to December 2004, we find that certain stop-loss rules add 50 to 100 basis points per month to the buy-and-hold portfolio during stop-out periods. By computing performance measures for several price processes, including a new regime switching model that implies periodic “flights-to-quality”, we provide a possible explanation for our empirical results and connections to the behavioral finance literature.

Introduction

Thanks to the overwhelming dominance of the mean-variance portfolio optimization framework pioneered by Markowitz (1952), Tobin (1958), Sharpe (1964), and Lintner (1965), much of the investments literature—both in academia and in industry—has been focused on constructing well-diversified static portfolios using low-cost index funds. With little use for active trading or frequent rebalancing, this passive perspective comes from the recognition that individual equity returns are difficult to forecast and trading is not costless. The questionable benefits of day-trading are unlikely to outweigh the very real costs of changing one’s portfolio weights. It is, therefore, no surprise that a “buy-and-hold” philosophy has permeated the mutual-fund industry and the financial planning profession.¹

¹This philosophy has changed slightly with the recent innovation of a slowly varying asset allocation that changes according to one’s age, e.g., a “lifecycle” fund.
However, this passive approach to investing is often contradicted by human behavior, especially during periods of market turmoil. These behavioral biases sometimes lead investors astray, causing them to shift their portfolio weights in response to significant swings in market indexes, often “selling at the low” and “buying at the high”. On the other hand, some of the most seasoned investment professionals routinely make use of systematic rules for exiting and re-entering portfolio strategies based on cumulative losses, gains, and other “technical” indicators.

In this paper, we investigate the efficacy of such behavior in the narrow context of stop-loss rules, i.e., rules for exiting an investment after some threshold of loss is reached and re-entered after some level of gains is achieved. We wish to identify the economic motivation for stop-loss policies so as to distinguish between rational and behavioral explanations for these rules. While certain market conditions may encourage irrational investor behavior—for example, large rapid market declines—stop-loss policies are sufficiently ubiquitous that their use cannot always be irrational.

This raises the question we seek to answer in this paper: When do stop-loss rules stop losses? In particular, because a stop-loss rule can be viewed as an overlay strategy for a specific portfolio, we can derive the impact of that rule on the return characteristics of the portfolio. The question of whether or not a stop-loss rule stops losses can then be answered by comparing the expected return of the portfolio with and without the stop-loss rule. If the expected return of the portfolio is higher with the stop-loss rule than without it, we conclude that the stop-loss rule does, indeed, stop losses.

Using simple properties of conditional expectations, we are able to characterize the marginal impact of stop-loss rules on any given portfolio’s expected return, which we define as the “stopping premium”. We show that the stopping premium is inextricably linked to the stochastic process driving the underlying portfolio’s return. If the portfolio follows a random walk, i.e., independently and identically distributed returns, the stopping premium is always negative. This may explain why the academic and industry literature has looked askance at stop-loss policies to date. If returns are unforecastable, stop-loss rules simply force the portfolio out of higher-yielding assets on occasion, thereby lowering the overall expected return without adding any benefits. In such cases, stop-loss rules never stop losses.

However, for non-random-walk portfolios, we find that stop-loss rules can stop losses. For example, if portfolio returns are characterized by “momentum” or positive serial correlation, we show that the stopping premium can be positive and is directly proportional to the magnitude of return persistence. Not surprisingly, if conditioning on past cumulative returns changes the conditional distribution of a portfolio’s return, it should be possible to find a stop-loss policy that yields a positive stopping premium. We provide specific guidelines for finding such policies under several return conditions.

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2For example, psychologists and behavioral economists have documented the following systematic biases in the human decisionmaking process: overconfidence (Fischhoff and Slovic, 1980; Barber and Odean, 2001; Gervais and Odean, 2001), overreaction (DeBondt and Thaler, 1986), loss aversion (Kahneman and Tversky, 1979; Shefrin and Statman, 1985; Odean, 1998), herding (Huberman and Regev, 2001), psychological accounting (Tversky and Kahneman, 1981), miscalibration of probabilities (Lichtenstein et al., 1982), hyperbolic discounting (Laibson, 1997), and regret (Bell, 1982a,b; Clarke et al., 1994).
specifications: mean reversion, momentum, and Markov regime-switching processes. In each case, we are able to derive explicit conditions for stop-loss rules to stop losses.

Of course, focusing on expected returns does not account for risk in any way. It may be the case that a stop-loss rule increases the expected return but also increases the risk of the underlying portfolio, yielding ambiguous implications for the risk-adjusted return of a portfolio with a stop-loss rule. To address this issue, we compare the variance of the portfolio with and without the stop-loss rule and find that, in cases where the stop-loss rule involves switching to a lower-volatility asset when the stop-loss threshold is reached, the unconditional variance of the portfolio return is reduced by the stop-loss rule. A decrease in the variance coupled with the possibility of a positive stopping premium implies that, within the traditional mean-variance framework, stop-loss rules may play an important role under certain market conditions.

To illustrate the empirical relevance of our analysis, we apply a simple stop-loss rule to the standard asset-allocation problem of stocks vs. bonds using monthly U.S. equity and bond returns from 1950 to 2004. We find that stop-loss rules exhibit significant positive stopping premiums and substantial reductions in variance over large ranges of threshold values—a remarkable feat for a buy-high/sell-low strategy. For example, in one calibration, the stopping premium is approximately 1.0% per annum, with a corresponding reduction of overall volatility of 0.8% per annum, and an average duration of the stopping period of less than 1 month per year. Moreover, we observe conditional-momentum effects following periods of sustained losses in equities that seem to produce scenarios where long-term bonds strongly dominate equities for months at a time. These results suggest that the random walk model is a particularly poor approximation to monthly U.S. equity returns, as Lo and MacKinlay (1999) and others have concluded using other methods.

Motivated by Agnew’s (2003) “flight to safety” for household investors, which is similar to the well-documented “flight to quality” phenomenon involving stocks and bonds, we propose a regime-switching model of equity returns in which the Markov regime-switching process is a function of cumulative returns. We show that such a model fits U.S. aggregate stock index data better than other time-series models such as the random walk and AR(1), and can explain a portion of the stopping premium and variance reduction in the historical data.

**Literature Review**

Before presenting our framework for examining the performance impact of stop-loss rules, we provide a brief review of the relevant portfolio-choice literature, and illustrate some of its limitations to underscore the need for a different approach.
The standard approach to portfolio choice is to solve an optimization problem in a multiperiod setting, for which the solution is contingent on two important assumptions: the choice of objective function and the specification of the underlying stochastic process for asset returns. The problem was first posed by Samuelson (1969) in discrete time and Merton (1969) in continuous time, and solved in both cases by stochastic dynamic programming. As the asset-pricing literature has grown, this paradigm has been extended in a number of important directions.3

However, in practice, household investment behavior seems to be at odds with finance theory. In particular, Ameriks and Zeldes (2004) observe that

... a great deal of observed variation in portfolio behavior may be explained by the outcome of a few significant decisions that individuals make infrequently, rather than by marginal adjustments continuously.

Moreover, other documented empirical characteristics of investor behavior include nonparticipation (Calvet, Campbell, and Sodini 2006); under-diversification (Calvet, Campbell, and Sodini 2006); limited monitoring frequency and trading (Ameriks and Zeldes 2004); survival-based selling decisions or a “flight to safety” (Agnew 2003); an absence of hedging strategies (Massa and Simonov, 2004); and concentration in simple strategies through mutual-fund investments (Calvet, Campbell and Sodini 2006). Variations in investment policies due to characteristics such as age, wealth, and profession have been examined as well.4

In fact, in contrast to the over-trading phenomenon documented by Odean (1999) and Barber and Odean (2000), Agnew (2003) asserts that individual investors actually trade infrequently. By examining asset-class flows, she finds that investors often shift out of equities after extremely negative asset returns into fixed-income products, and concludes that in retirement accounts, investors are more prone to exhibit a “flight to safety” instead of explicit return chasing. Given that 1 in 3 of the workers in the United States participate in 401(k) programs, it is clear that this “flight to safety” could have a significant impact on market prices as well as demand. Consistent with Agnew’s “flight-to-safety” in the empirical application of stop-loss, we find momentum in long-term bonds as a result of sustained periods of loss in equities. This suggests conditional relationships between stocks and bonds, an implication which is also confirmed by our empirical results.5

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3 For a comprehensive summary of portfolio choice see Brandt (2004). Recent extensions include predictability and autocorrelation in asset returns (Brennan and Xia, 2001; Xia, 2001; Kim and Omberg, 1996; Wachter, 2002; Liu, 1999; and Campbell and Viceria, 1999), model uncertainty (Barberis, 2000), transaction costs (Balduzzi and Lynch, 1999), stochastic opportunity sets (Brennan, Schwartz, and Lagnado, 1997; Brandt, Goyal, Santa-Clara, and Stroud, 2005; and Campbell, Chan, and Viceria, 2003), and behavioral finance (see the references in footnote 2).

4 For example, lack of age-dependence in allocation, lower wealth and lower education with greater nonparticipation and under-diversification, and greater sophistication in higher wealth investors have all been considered (see Ameriks and Zeldes, 2004).

5 Although excess performance in long-term bonds may seem puzzling, from a historical perspective, the deregulation of long-term government fixed-income products in the 1950’s could provide motivation for the existence of these effects.
Although stop-loss rules are widely used, the corresponding academic literature is rather limited. The market microstructure literature contains a number of studies about limit orders and optimal order selection algorithms (Easley and O’Hara, 1991; Biais, Hillion, and Spatt, 1995; Chakravarty and Holden, 1995; Handa and Schwartz, 1996; Harris and Hasbrouck, 1996; Seppi, 1997; and Lo, MacKinlay, and Zhang, 2002). Carr and Jarrow (1990) investigate the properties of a particular trading strategy that employs stop-loss orders, and Tschoegl (1988) and Shefrin and Statman (1985) consider behavioral patterns that may explain the popularity of stop-loss rules. However, to date, there has been no systematic analysis of the impact of a stop-loss rule on an existing investment policy, an oversight that we remedy in this paper.

Editor’s note: the paper continues by developing a framework for analyzing stop-loss rules and presents the results of various rules.

Empirical Analysis

To illustrate the potential relevance of our framework for analyzing stop-loss rules, we consider the performance of (rules) when applied to the standard household asset-allocation problem involving just two asset classes: stocks and long-term bonds. Using monthly stock- and bond index data from 1950 to 2004, we find that stop-loss policies produce surprising conditional properties in portfolio returns, stopping losses over a wide range of parameter specifications. Our simple stop-loss rule seems to be able to pick out periods in which long-term bonds substantially out-perform equities, which is especially counterintuitive when we consider the unconditional properties of these two asset classes historically.

For our empirical analysis, we use the monthly CRSP value-weighted returns index to proxy for equities and monthly long-term government bond returns from Ibbotson and Associate to proxy for bonds. We also consider Ibbotson’s short-term government bond returns for purposes of comparison. Our sample runs from January 1950 to December 2004, the same time span used by Ang and Berkart’s (2004) study of regime-switching models and asset allocation. In Section 5.4, we consider the longer time span from January 1926 to December 2004 to reduce estimation error for our behavioral regime-switching model estimates.
We conclude that stop-loss rules apparently exploit momentum effects in equities and long-term bonds following periods of sustained losses in equities.

**Basic Results**

The empirical analysis we perform is straightforward: consider investing 100% in equities in January 1950, and apply the simple stop-loss policy (rules) to this portfolio on a monthly basis, switching to a 100% investment in long-term bonds when stopped out, and switching back into equities 100% when the re-entry threshold is reached. We run this simulation until December 2004, which yields a time series of 660 monthly returns \( \{r_{st}\} \) with which we compute the performance statistics.

Specifically, we compute performance measures for the simple stop-loss strategy (rules) for cumulative-return windows \( J = 3, 6, 12, \) and 18 months over stop-loss thresholds \( \gamma = 4\% - 14\% \) and re-entry thresholds \( \delta = 0\% \) and 2%. The performance measures \( \Delta \mu, \Delta \sigma, \Delta \mu_{po}, \) and \( \rho_{o} \) are graphed in Figure 1. Two robust features are immediately apparent: the first is that stopping premiums \( \Delta \mu \) are positive, and the second is that the volatility differences \( \Delta \sigma \) are also negative. This suggests that stop-loss rules unambiguously add value to mean-variance portfolio optimizers. Moreover, the robustness of the results over a large range of parameter values indicates some significant time-series structure within these two asset classes.

Figure 1 also shows that \( \Delta \mu \) seems to decrease with larger cumulative-return windows, especially for \( J = 6 \) and 12 months. This finding is consistent with \( \Delta \mu \) increasing in \( \rho_{o} \) when the risk-free rate \( r_{f} \) is higher than the conditional expected return of equities, conditioned on being stopped out.
For the shorter window lengths, smaller thresholds provide less value-added but the value remains positive. However, for the 18-month window, larger thresholds perform better. This connection between stop-loss threshold and cumulative-return window size suggests that there is some fundamental relation—either theoretical or behavioral—between the duration of losses and their magnitude.

Our findings seem to imply momentum-like effects for large negative equity returns, except in the case of large losses over short periods of time which seems to imply reversals. However, since the main focus of our attention is on means and variances, a natural concern is the undue influence of outliers. Even during stop-out periods, we find that the kurtosis of stock and bond returns to be in the range of 2 to 3. We also find that the stop-out periods are relatively uniformly distributed over time, refuting the obvious conjecture that a small number of major market crashes are driving the results. Surprisingly, when we exclude the “Tech Bubble” by limiting our sample to December 1999, we find increased performance for our stop-loss policy in most cases. One explanation is that during significant market declines, our stop-loss policy may get back in too quickly, thereby hurting overall performance.

Figure 1 also includes a plot of $\Delta \sigma$, which shows that volatility is always reduced by 20% the stop-loss policy, but the reduction is smaller for larger stopping thresholds $\gamma$. This is to be expected because larger thresholds imply that the stop-loss policy is activated less often. Nevertheless, the reduction in variance is remarkably pronounced for a strategy which so rarely switches out of equities. This reduction seems to be coming from two sources: switching to a lower-volatility asset, and avoiding subsequently higher-volatility periods in equities.
The stop-loss policy has a significant impact on the portfolio’s Sharpe ratio even in this simple two-asset case. The relation between ∆SR and window size underscores the potential connection between the amount of time losses are realized and appropriate stop-loss thresholds. Based on our empirical analysis, we conclude that stop-loss policies could indeed have added value to the typical investor when applied to equities and long-term bonds from 1950 to 2004.

Editor’s note: the paper then provides a more detailed analysis of these results by conducting a performance attribution for the two assets, and by examining several models for asset returns to gauge how substantial these effects are

Conclusion

In this paper, we provide an answer to the question when do stop-loss rules stop losses? The answer depends, of course, on the return-generating process of the underlying investment for which the stop-loss policy is implemented, as well as the particular dynamics of the stop-loss policy itself. If “stopping losses” is interpreted as having a higher expected return with the stop-loss policy than without it, then for a specific binary stop-loss policy, we derive various conditions under which the expected-return difference—which we call the stopping premium—is positive. We show that under the most common return-generating process—31 the Random Walk Hypothesis—the stopping premium is always negative. The widespread cultural affinity for the Random Walk Hypothesis, despite empirical evidence to the contrary, may explain the general indifference to stop-loss policies in the academic finance literature.

However, under more empirically plausible return-generating processes such as momentum or regime-switching models, we show that stop-loss policies can generate positive stopping premia. And when applied to the standard household asset-allocation decision between U.S. equities and long-term bonds from January 1950 to December 2004, we find a substantially positive stopping premium with a correspondingly large reduction in variance. These empirical results suggest important nonlinearities in aggregate stock and bond returns that have not been fully explored in the empirical finance literature. For example, our analysis suggests elevated levels of momentum associated with large negative returns, and asymmetries in asset returns following periods of cumulative losses.

Our analytical and empirical results contain several points of intersection with the behavioral finance literature. First, the flight-to-safety phenomena—best illustrated by events surrounding the default of Russian government debt in August 1998—may create momentum in equity returns and increase demand for long-term bonds, creating positive stopping premia as a result. Second, systematic stop-loss policies may profit from the disposition effect and loss aversion, the tendency to sell winners too soon and hold on to losers too long. Third, if investors are ambiguity-averse, large negative returns may cause them to view equities as more ambiguous which, in relative terms, will make long-term bonds seem less ambiguous. This may cause investors to switch to bonds to avoid uncertainty about asset returns.
More generally, there is now substantial evidence from the cognitive sciences literature that losses and gains are processed by different components of the brain. These different components provide a partial explanation for some of the asymmetries observed in experimental and actual markets. In particular, in the event of a significant drop in aggregate stock prices, investors who are generally passive will become motivated to trade because mounting losses will cause them to pay attention when they ordinarily would not. This influx of uninformed traders, who have less market experience and are more likely to make irrational trading decisions, can have a significant impact on equilibrium prices and their dynamics. Therefore, even if markets are usually efficient, on occasions where a significant number of investors experience losses simultaneously, markets may be dominated temporarily by irrational forces. The mechanism for this coordinated irrationality is cumulative loss.

Of course, our findings shed little light on the controversy between market efficiency and behavioral finance. The success of our simple stop-loss policy may be due to certain nonlinear aspects of stock and bond returns from which our strategy happens to benefit, e.g., avoiding momentum on the downside and exploiting asymmetries in asset returns following periods of negative cumulative returns. And from the behavioral perspective, our stop-loss policy is just one mechanism for avoiding or anticipating the usual pitfalls of human judgment, e.g., the disposition effect, loss aversion, ambiguity aversion, and flight-to-safety.

In summary, both behavioral finance and rational asset-pricing models may be used to motivate the efficacy of stop-loss policies, in addition to the widespread use of such policies in practice. This underscores the importance of learning how to deal with loss as an investor, of which a stop-loss rule is only one dimension. As difficult as it may be to accept, for the millions of investors who lamented after the bursting of the Technology Bubble in 2000 that “if I only got out earlier, I wouldn’t have lost so much”, they may have been correct.

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Econometrics of Financial Markets, A Non-Random Walk Down Wall Street, The Heretics of Finance and The Evolution of Technical Analysis, and is the author of Hedge Funds: An Analytic Perspective. He is currently a Research Associate of the National Bureau of Economic Research and a member of the OFR Financial Research Advisory Committee, the New York Federal Reserve Board’s Financial Advisory Roundtable, FINRA’s Economic Advisory Committee, the Consortium for Systemic Risk Analytics Academic Advisory Board, the Board on Mathematical Sciences and Their Applications, and Beth Israel Deaconess Medical Center’s Board of Overseers. He is founder and chief scientific officer of AlphaSimplex Group, LLC, a quantitative investment management company based in Cambridge, Massachusetts. Lo holds a BA in economics from Yale University as well as an AM and a PhD in economics from Harvard University.
On June 28, 1914, Austrian Archduke Franz Ferdinand was assassinated in Sarajevo. This event led to a month of failed diplomatic maneuvering between Austria-Hungary, Germany, France, Russia, and Britain which ended with the onset of the Great War, as it was originally called.

Austria-Hungary declared war on Serbia on July 28, causing Germany and Russia to mobilize their armies on July 30. When Russia offered to negotiate rather than demobilize their army, Germany declared war on Russia on August 1. Germany declared war on France on August 3, and when Germany attacked Belgium on August 4, England declared war on Germany. Europe was at war, and millions would die in the battles that followed.

The impact on global stock markets was immediate: the closure of every major European exchange and many of the exchanges outside of Europe. Although no one would have predicted this result at the beginning of July 1914, by the end of the month, European stock exchanges were making preparations for the inevitable war and its impact.

Never before had all of Europe’s major exchanges closed simultaneously, but then again, never had such a global cataclysm struck the world. There had been crises before when the stock market in the United States or other countries had closed, such as the 1848 Revolution in France, or the Panic of 1873 in New York, but never had all the world’s major stock markets closed simultaneously.

**Open Financial Markets Led to Closed Exchanges**

Ironically, it was because of the openness of global financial markets before the war that the global closure of stock markets occurred. At the beginning of 1914, capital was free to flow from one country to another without hindrance. All the major countries of the world were on the Gold Standard, and differences in exchange rates were arbitraged through the buying and selling of international bonds listed on the world’s stock exchanges. A country such as Russia would issue a bond that was listed on the stock exchanges in London, New York, Paris, Berlin, Amsterdam and St. Petersburg. Differences in exchange rates between countries could be arbitraged by buying and selling bonds in different markets. In effect, this made European stock exchanges a single, integrated market.

In 1914, currency flowed between countries with lightning speed. During the Napoleonic wars, money could only move as quickly as a ship could venture from one country to another. By 1914, cables stretched across the oceans of the world, and money as well as stock orders could be wired telegraphically from one corner of the world to another in minutes.
Traders throughout the world could sell bonds and shares instantly, and it was the fear of massive selling, and the impact this would have on global markets that led to the shutdown of European exchanges. There was a concern that investors would try to repatriate their money leading to massive selling, a sharp fall in prices, and large amounts of capital flowing out of one country and into another.

The impact of selling on brokers and jobbers was exacerbated by the way shares were traded on the London Stock Exchange. Individual trades were made on a daily basis, then carried until Settlement Day when trades were matched and crossed. Brokers would make up the surplus or deficit on their accounts by settling outstanding trades with cash. As long as there were no significant swings in stock or bond prices, brokers had sufficient capital to settle their accounts. However, since traders relied on credit, large swings in prices could and would bankrupt many of the brokers, worsening the financial panic. To avoid this problem, stock markets were closed until a solution could be found.

The War Drives Stock Prices Down

Of course, to investors not being able to buy or sell shares is even worse than selling them at a loss. Although stocks could not be traded on the main exchanges, over-the-counter markets replaced exchanges for those who were desperate enough to sell.

Although the NYSE was closed between July 30 and December 12 of 1914, stocks were quoted by brokers and traded off the exchange. Global Financial Data has gone back and collected stock prices during the closure of the NYSE to recreate the Dow Jones Industrial Average while the NYSE was closed. We collected the data for the 20 stocks in the new DJIA 20 Industrials and calculated the average of the bid and ask prices from August 24, 1914 to December 12, 1914. This enabled us to discover that the 1914 bottom for stocks actually occurred on November 2, 1914 when the DJIA hit 49.07, over a month before the NYSE reopened. Few people realize that stocks in the US had already bottomed out and were heading into a new bull market when the NYSE reopened on December 12, 1914. The DJIA did not revisit this level until the Great Depression in 1932.

The graph below shows how the Dow Jones Industrial Average behaved during 1914, including the period of the NYSE’s closure. Although the market declined with the onset of war, investors eventually realized that war in Europe would bring opportunities to American companies to sell industrial goods and war materiel. Once this fact settled in, the stock market rose steadily for the next year.
The NYSE reopened trading for bonds under restrictions on November 28th; the San Francisco Stock and Bond Exchange reopened on December 1st; and the NYSE resumed trading at pegged prices on December 12th, though the prospect of war profits soon made these restrictions irrelevant.

As the graph below shows, the Dow Jones Industrial Average almost doubled in price in the year following its bottom in November 1914. The market paused, then had another rally into 1916 before falling back once investors realized the strong profits they had predicted from the war would not be realized.
The Closure of European Exchanges

In Europe, the problem of preventing catastrophic declines in stock prices was solved by putting a floor on share prices. Initially, stocks and bonds were not allowed to trade below the price they had been trading at on July 31, 1914. The government also placed restrictions on capital, limiting or preventing large flows of capital out of the country for the remainder of the war.

With these restrictions in place, markets reopened in Europe. The London Times began printing stock prices for London and Bordeaux on September 19th and for Paris on December 8, 1914. In January 1915, all shares were allowed to trade on the London Stock Exchange, though with price restrictions. The St. Petersburg exchange reopened in 1917 only to close two months later due to the Russian Revolution. The Berlin Stock Exchange did not reopen until December 1917.

Unlike the United States, stocks on the London Stock Exchange declined in price during World War I. This was due not only to the decline in earnings that occurred and general selling of shares to raise capital, but just as importantly, because of the lack of new buying and the shift of capital to government war debt. British companies were allowed to issue new shares only if the issue was in the national interest, and foreign governments and companies were not allowed to issue any new shares. The British government wanted to insure that all available capital was used to fund the growing war debt.

Most of the new bonds that listed on the London Stock Exchange were British government bonds and their share of the London Stock Exchange's capitalization rose from 9% to 33% during the war. The performance of the London Stock Exchange between 1913 and 1919 is shown below. As can be seen, stocks lost value continually during the war, hitting their bottom only in 1918, despite the general inflation that occurred in Britain during the war, which normally would have carried prices upwards.
The Long-Term Impact of World War I

World War I destroyed the global integration of capital markets. The Gold Standard never returned despite attempts after the war to revive it. The system of issuing bonds and shares internationally failed to recover from the war, and stock exchanges listed fewer international shares. The ownership of stocks and bonds from other countries shrank dramatically.

Exchanges were subjected to extensive regulation that did not exist prior to the war. Germans were not even allowed to trade on the London Stock Exchange for years after the war was over. London lost its place as the center of global finance during the war as its role as the center of global finance was passed on to New York. Nevertheless, New York was never able to take on the pivotal role in capital markets that London held prior to World War I.

After the war was over, financial markets had to deal with the dislocations created by the war: inflation, increased government debt, reparation payments, the Russian Revolution, the creation of new countries, England’s failed attempt to return to the Gold Standard, the stock market crash of 1929, the Great Depression, debt defaults, competitive devaluations, the concentration of gold in France and the United States and a hundred other financial repercussions that resulted from World War I.

Governments and stock exchanges did learn their lessons from World War I. When World War II began, the London Stock Exchange closed for only a week, and the New York Stock Exchange never closed during World War II, save for August 15-16, 1945 when the NYSE closed to recognize V-J Day and the end of WWII. The Berlin Stock Exchange remained open during World War II, though price floors and capital restrictions kept the prices of shares from falling until the devaluation of 1948.

Although global stock markets reopened between 1914 and 1917, it wasn’t until the 1980s that the restrictions on financial markets that prevented the free flow of capital that had existed before 1914 were removed. Only after the fall of Communism did stock markets become as globally integrated as they had been before 1914.

Though the focus of the hundredth anniversary of World War I will be on the massive destruction of World War I, the deaths of millions, and how World War I laid the foundations for World War II, the impact on stock markets and international finance should never be forgotten.
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.
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In Bloomberg Briefs, Paul Ciana, CMT, demonstrated the value of charting a commodity in multiple currencies. He wrote, “The chart above displays five charts of the continuous front month wheat future that trades on the Chicago Board of Trade. The top panel is wheat priced in U.S. dollars. The second panel is wheat priced in euros, followed by Australian dollars in the third and Indian rupees in the bottom panel. Each chart has the 50-day (magenta), 100-day (green) and 200-day (blue) simple moving average applied.”
Based on the chart, he believes wheat futures face significant resistance at the moving averages. The exception is wheat priced in rupees but that could be due to the fact India recently increased imports of wheat from Australia. The breakout in rupees could be an indicator that wheat will be breaking through resistance priced in other currencies.

Based on this chart, Ciana believes that confirmed breakouts in multiple currencies could lead to significantly higher prices in wheat. This technique is an expansion of intermarket analysis using a commodity priced in multiple currencies to confirm a trend reversal. It can be implemented in a number of software packages.

Paul Ciana, CMT, is an equity and technical analysis application specialist at Bloomberg LP in New York. He can be contacted at PCiana@Bloomberg.net. He works with Product Development to identify, prioritize and develop new analytics for the Bloomberg Professional service. This includes global market breadth analytics, custom charting/data visualization solutions, strategy validation tools, alert intelligence and mobile charting. Paul is actively involved with defining and executing the firms marketing strategy through events and research. He founded the Bloomberg EDGE conference series in July 2010 and with the support of his counterparts they have successfully taken the event to cities around the world. In 2011, Paul published "New Frontiers in Technical Analysis" discussing many advanced strategies on the Bloomberg Professional Service. He also founded and contributes to the Bloomberg BRIEF Technical Strategy report.
Why are Financial Professionals all over the world switching to Market Analyst?

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Every year, members are required to complete a Professional Conduct Statement (PCS) when they renew their membership. Prospective members and affiliates are also required to complete the PCS. This document has been the source of many questions to the Ethics and Standards Committee. In this article, we review the PCS and address some of the most frequently asked questions.

In general terms, the PCS asks if your professional conduct has been the subject of a complaint with the past few years. Specifically, the question you must answer is:

Has your professional or business conduct (a) been complained about, or (b) been the subject of a proceeding of any nature (with or without or without hearing), to, in, or by [any regulator] or other quasi-judicial body, or any professional or business organization:

1) Within the past 12 months?
2) Within the past 5 years?

Answering “yes” to either of these questions will not necessarily have an impact on your membership status.

It’s important to remember that disclosure of any complaints is mandatory on the PCS. If a customer has complained to FINRA in the United States, one of the stock exchanges in India, the Canadian Securities Administrators in Canada or any other regulator in any country, the answer to the PCS is “yes” for the next five years.

If you have any doubts as to whether or not a complaint should be reported, it is always best to assume that it should be reported on the PCS.

**What happens if the answer is “yes”?**

The circumstances of the complaint will be reviewed by the Ethics and Standards Committee. There are no pre-established sanctions or preconceptions. The Committee reviews the matter carefully and as quickly as possible (usually within several days).

Many members of the MTA have answered “yes” to the questions on the PCS. This is simply because many members have been the subject of complaints in the industry. The fact that a complaint is filed by a customer is not proof of wrongdoing in the eyes of regulators or the MTA. Many complaints are dismissed by regulators. Others are settled in a manner that satisfies the customer and the regulators.
When a member answers “yes” on their PCS, the Ethics and Standards Committee will review the circumstances. In the past, there have been no cases of disciplinary action taken when the member disclosed a complaint. This does not mean a member’s disclosure will never lead to action. Complaints arising from fraud or criminal activity could affect a member’s membership status.

Will a “yes” answer prevent me from obtaining the CMT designation?

No. In most cases a complaint will have no impact on the award of the designation. If the complaint is about conduct that requires disciplinary action including a large fine or suspension for an extended period of time by a regulator or the MTA Board of Directors, you could be denied the CMT designation. Examples of a complaint that could impact the award of the CMT would be convictions for insider trading or securities fraud.

Will a “yes” answer prevent me from serving on committees or in leadership positions in the MTA?

Not necessarily. The complaint will be considered when you volunteer for a committee or are nominated for a leadership position. There are examples where complaints have not prevented members from serving in these roles.

What if a complaint was dismissed by the regulators or the complaint was not substantiated in arbitration proceedings?

Members are still required to answer “yes” on their PCS. Complaints are often dismissed without any action by the regulators or settled in a manner that satisfies all parties. Even if the complaint is dismissed or settled, it must be disclosed on the PCS.

What if I reported a complaint last year and it was subsequently dismissed. Do I still need to answer “yes”?

Yes. It is important to answer the PCS truthfully for the entire reporting period. If the complaint was filed within the past five years, you must answer “yes” on the PCS. You can note in the comments section that the complaint was previously reported to the MTA and provide the current status of the complaint.

What happens if a complaint was filed against me and I answer “no”?

Incorrect or untruthful answers on the PCS are a violation of the Code of Ethics. This type of violation would be addressed by the Ethics and Standards Committee. Failing to disclose complaints could be cause for suspension of membership or more severe penalties. In the past, answering “no” when complaints were filed against a member has resulted in suspension of membership.
Of course it is possible a member was unaware of a complaint when they completed the PCS. In this case, the member should contact the MTA as soon as they know of a complaint.

**Will a complaint be made public by the MTA?**

No. Complaints are reviewed by the Ethics and Standards Committee but are not publicized in any way by the organization unless the member is disciplined under the MTA’s Constitution and Bylaws. The MTA’s discipline process is fully detailed in those documents. Members who have been sanctioned by regulators or failed to disclose a complaint could be sanctioned by the MTA. In that case, the complaint could be included in any announcement of the MTA’s discipline.

The bottom line: if a complaint has been filed against you, be sure to disclose that fact on the PCS.
Alex Cole has put together a screen to show the trend of major currencies, sovereign yields, commodities and global stock market averages. Based on the charts, he concludes:

- The dollar held support while the British pound extended its breakout.
- Most major sovereign yields are testing resistance or breaking out.
- The euro-zone bonds lead the way, having broken out of a downward channel.
- Crude oil futures are trying to maintain their rally.
- The S&P 500 is barely holding at all-time highs.

Alex Cole is a technical analysis specialist in Bloomberg's analytics department. He can be contacted at ACole9@Bloomberg.net.
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