LETTER FROM THE EDITOR

Just four months after the winner of the 2015 Charles H. Dow Award was recognized it’s time to plan for the 2016 Award. This month we are announcing the deadlines for the Award. Although there are several months before papers are due, planning and writing the papers is a large undertaking. We hope many of you will begin that pursuit.

This month’s newsletter also includes an admission by one of Wall Street’s most-respected strategists that technical analysis is an important component of his work. Byron Wien, a name familiar to many readers, credits technical analysis with turning his career around.

We also have research on market liquidity, a growing concern especially in the fixed income markets. Liquidity is a major factor in supply and technical analysis is dedicated to the study of supply and demand. Changes in market structure could make price action more volatile. As this article highlights, we have already seen several liquidity-related market events and are likely to see more. The potential implications of liquidity changes are important to technicians and we hope you’ll find this research to be useful. Please let us know which areas of research interest you by emailing us at editor@mta.org.

Sincerely,

Michael Carr
Editor’s note: Riccardo Ronco, CFTe, is the head of technical analysis at Aviate Global in London. He provided an overview of the benefits of trend following strategies at the MTA Annual Symposium in March. The complete presentation is available at the MTA’s Knowledge Base, the web’s free repository for everything related to technical analysis.

Investing with the trend is a mainstay of many money managers who outperform their benchmark. Recent research proves this, showing that the majority of the returns from managed futures strategies is explained by trend following or momentum. That research provides a quantitative explanation for this behavior but it can also be explained with a simple chart. Behavioral finance heuristics, specifically anchoring and herding, explain why trend following works.

To achieve profitable performance, an investment manager needs to find trends and trade with discipline. Technical analysis provides objective tools that can be used to find trends.
The first step in trend following is to define the trend which Riccardo defines as “a sustained change in prices in one direction.” The trend can be defined precisely in a number of ways, for example with moving averages or Elliott Waves. Because there are many tools to be applied to defining the trend, following the tool with discipline is more important than the selection of the tool. If you use moving averages, for example, you need to use moving averages all the time. You cannot switch definitions because that will lead to erratic decisions.

After selecting the tool you will use, trend following requires following the market. There is no forecasting involved. It’s best to focus on factors that are in your control, such as the position size and the exit rules, rather than worrying about the outcome of any individual trade. Trend following is a robust process when applied consistently. Riccardo noted it’s simple, but not easy because letting profits run and cutting losses goes against our natural instincts.

The idea of trend following is not new. In his presentation Riccardo shared a quote attributed to the economist David Ricardo who died in 1823. He also quoted Jesse Livermore who traded in the early 20th century. Livermore believed “A loss never bothers me after I take it, I forget if overnight. But being wrong, not taking the loss - that is what does damage to the pocket book and to the soul.” Livermore also discussed the importance of following the trend, “After spending many years in Wall Street and after making and losing millions of dollars I want to tell you this: it never was my thinking that made the big money for me. It was always my sitting.”

One of the biggest problems trend followers face is psychological – the ability to withstand deep drawdowns. Trend following works in the long term but there could be numerous small losses that occur while waiting for the rare large win that results from an extended trend. Mathematically, expectancy can be used to determine the probability of long-term success. Based on expectancy, odds favor trend following even when there are low win rates.
While expectancy proves the probability of long-term success, the short term can be challenging. With a 40% win rate, a common value for trend following systems, there is a chance that you will experience 18 consecutive losing trades over 10,000 trades. This math summarizes the psychological problem. Many investment managers, or their clients, will not be able to sit through the extended drawdowns or long losing streaks. However, data shows if they do survive the drawdowns, investors will be rewarded.

MTA member Mebane Faber has written extensively on applying the 10-month moving average. Riccardo cited his work as an example of the results that are attainable with trend following strategies.
Riccardo also demonstrated that these same rules can be applied to sectors as well. Using the ten S&P sectors, the 10-month moving average outperformed the broad stock market with less risk.

<table>
<thead>
<tr>
<th>Jan 1992 – Feb 2015</th>
<th>CAGR</th>
<th>Ann. St.dev</th>
<th>Mod Sharpe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy (blue)</td>
<td>10.74%</td>
<td>8.46%</td>
<td>1.27</td>
</tr>
<tr>
<td>SPY TR (red)</td>
<td>7.75%</td>
<td>15.30%</td>
<td>0.51</td>
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And, the 10-month moving average works for global equities as well.

Trend following is a simple strategy that has been used by many investment managers to beat the market. It requires discipline to follow but if followed consistently could be the key to success for many managers in the future.
Riccardo Ronco, CFTe, is the head of technical analysis at Aviate Global in London. He follows large- and mid-cap European and U.S. equities, paying attention to domestic and foreign equity indices, currencies, commodities, and interest rates. As a medium-term trend follower, his approach is strongly quantitative in nature; particular attention, however, is devoted to identifying reversal patterns characterized by excessive consensus among investors.

Mr. Ronco brings more than 15 years of experience in trading, quantitative analysis, and teaching technical analysis in the United Kingdom and Italy. Prior to joining Aviate Global in April 2010, Mr. Ronco worked for Credit Agricole Indosuez, Banca Intesa Group, and Banca AntonVeneta (MontePaschi Group) and FBR Capital Markets.

He is a frequent guest on CNBC Europe and other European media outlets. A member of the Society of Technical Analysts (STA) and the Market Technicians Association (MTA), Mr. Ronco was a speaker at the International Federation of Technical Analysts (IFTA) 1998 conference in Rome. His work is mentioned in the book *Capital Market Revolution: The Future of Markets in an Online World* by Patrick Young. Mr. Ronco received his degree (with honors) in Economics from the University of Turin. He has completed the first two levels of the CMT program.
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“Please excuse my language, but holy crap, MA continues to blow me away. Difficult time stringing words together but feature after feature astounds me... i.e., the ability to highlight numerous tools/lines/etc and make it a quick button up top is crazy. Multi-time frame analysis with different periods/averages on the same chart... multi-currency - wow. Flexibility to deal with multiple markets at the same time.”

DAVID COX, CFA, CMT - Portfolio Manager, CIBC Wood Grundy
Economist Byron Wien is well known for his annual list of ten surprises. Less well known is Wien’s reliance on technical analysis to develop his more traditional market forecasts. In a recent *Wall Street Week* appearance, Wien discussed his early career. In his first job as a stock market analyst, he was struggling to make consistently good recommendations. In Wien’s words, he “was a wonderful security analyst but a lousy stock picker.”

After a year, his manager told him he needed to turn his performance around or find another job in the next 3-6 months. Byron turned it around and went on to a successful career that has led him to the position of Vice Chairman at Blackstone Advisory Partners LP. Gary Kaminsky, co-host of *Wall Street Week*, asked what was responsible for the turnaround and Byron said:

“I began to use technical analysis and technical analysis helped me a lot. If I did the fundamental work plus the technical analysis I began to pick stocks pretty effectively.”

Kaminsky agreed that technical analysis is important to finding big moves in stocks. Byron followed up with a comment that he was recently speaking with Stanley Druckenmiller about technical analysis. Druckenmiller is also a practitioner of technical analysis. Wien noted Druckenmiller said he could review 3,000 charts in an hour but couldn’t guess how much time he would need to review 3,000 annual reports.

Druckenmiller is known as an extraordinarily successful investment manager. He was working with George Soros and together they managed the trade that broke the Bank of England and earned $1 billion shorting the British pound in 1992. Druckenmiller also ran Duquesne Capital Management, a hedge fund that he converted to a family office in 2010. Druckenmiller’s net worth is estimated to be $3.1 billion by *Forbes*.

After this discussion, the *Wall Street Week* interview turned to the Surprises list.

Below are “Byron’s Ten Surprises” for 2015 from Blackstone’s web site. Byron defines a “surprise” as an event which the average investor would only assign a one out of three chance of taking place but which Byron believes is “probable,” having a better than 50% likelihood of happening. Some of this year’s surprises have already come to pass and others seem increasingly likely.

1. The Federal Reserve finally raises short-term interest rates, well before the middle of the year, encouraged by the improving employment data and strong Gross Domestic Product growth. The timing proves faulty, however, as the momentum of the economy has begun to flag and a short-term slowdown has started. The end of monetary
accommodation and rising rates precipitate a correction in equities. Long-term Treasury rates stay where they started and the yield curve flattens.

2. Our luck runs out on cyber terrorism. Hackers invade the personal and corporate accounts of a major money center bank and the Federal Reserve orders the institution to suspend transactions for five business days while the accuracy of its balances is verified. Various government departments and agencies are mobilized to deal with the problem caused by the hackers having proved to be more skillful than our corporate cyber security efforts.

3. The year-end 2014 rally in United States equities continues as the market rises for a strong performance in 2015. A growing economy, fueled by housing and capital spending and favorable earnings, enables the Standard & Poor’s 500 to increase 15% during the year, outperforming equities in most major industrialized countries throughout the world.

4. Mario Draghi finally begins to expand the balance sheet of the European Central Bank aggressively by buying sovereign debt, mortgages and corporate bonds. In spite of this expansion, Europe falls back into a serious recession. Germany is particularly weak as reduced demand from various trading partners has a major impact on its exports. The European policy makers fail to embrace the one option, fiscal spending, that could turn the economy around, and European stocks decline. Politically, Europe moves dangerously toward the right.

5. Shock and awe no longer works in Japan. The recession which began in the third quarter of 2014 continues throughout 2015 in spite of further fiscal and monetary stimulus and the suspension of the second planned sales tax increase. The Nikkei 225 is flat for the year in yen and down in dollars.

6. China reports that it is no longer growing at 7% and that more fiscal and monetary stimulus is needed to grow at even 5% and to prevent a hard landing. It also acknowledges that it must rebalance the economy toward the consumer and away from credit-based investing in state-owned enterprises and infrastructure. What money is spent on infrastructure is focused on air, water and ground pollution, not roads and housing. A lower rate of job creation leads to protests but they are contained without excessive violence.

7. The drop in the price of oil finally has an impact on Iran. The country was dependent on its sale of crude to offset the impact of sanctions. The economic weakness resulting from the unexpected decline in oil finally forces a conciliatory attitude on the part of its nuclear negotiators. Pressure to cease nuclear weapons development comes from the Iranian people as well, as they seek more economic opportunity. An agreement to roll back its weapons program is greeted positively throughout the region and world equity markets rally briefly on the news.

8. Brent slips into the $40s. The low price of crude oil, which continues throughout the first part of the year, has a major impact on Russia. A peace settlement with Ukraine is signed, giving Eastern Ukraine substantial autonomy but guaranteeing the sovereignty of the rest of the country. President Putin seems to be trying to win back the respect of the international community as the country reels from its economic problems, but the Russian citizenry finally turns on him. His approval rating plummets and he resigns by year-end. During the second half of the year, West Texas Intermediate and Brent crude are both above $70, as emerging market demand continues to increase.
9. The year-end 2014 meltdown in the high yield market, as a result of the collapse in the price of oil, creates a huge buying opportunity. The spread between high yield and Treasurys is cut in half, and high yield becomes the best performer of the various asset classes as the U.S. economy continues to grow with no recession in sight.

10. The Republicans decide to position the party as the one that can get something done in Washington. They argue that President Obama was ineffective in his first six years, but when they got control of both the Senate and the House, legislation was passed. The Keystone pipeline finally is approved, as well as minor tax code revisions and even some changes in immigration policy. The Republicans are determined to strengthen their position with Hispanics in 2016. They want desperately to hold the nation’s highest office and they see Jeb Bush as a winner for them.

Wien commented that, “Every year there are always a few Surprises that do not make the Ten either because I do not think they are as relevant as those on the basic list or I am not comfortable with the idea that they are ‘probable.’” These include:

11. Water becomes the central environmental issue of 2015, eclipsing carbon-caused air pollution. While a shortage of water has always been a potential problem in the Western United States, it becomes a source of considerable tension in India and China, where large parts of the population do not have safe drinking water on a consistent basis.

12. Internet commerce runs into trouble. Established hotels push legislators to make Airbnb pay the same taxes and fees that they are required to charge customers. Uber is asked by local authorities to prove that its drivers have commercial insurance to protect passengers. The stocks affected decline sharply.

13. Brazil provides an emerging market favorable surprise. President Dilma Rousseff abandons some of her long-held socialist ideas and moves to the center. She introduces a number of business-friendly policies and the economy improves. It is helped more than it is hurt by the drop in the oil price. Brazil becomes a favorite of emerging market investors once again.

14. I liked this one, but I didn’t have more than 50% conviction about it. Hillary Clinton decides not to run for President. She fears that Jeb Bush would siphon off some of the votes of Hispanics, who substantially voted for Obama. Many liberals are disenchanted with Clinton and may not vote for her. She wants to be the first woman President but she doesn’t want to lose.

The list is more than just a curiosity. It demonstrates the wide range of thinking necessary for a market analyst’s success. All analysts can benefit from a broad view of global markets, global economic conditions and the political environment around the world.
Byron Wien is Vice Chairman of Blackstone Advisory Partners LP where he acts as a senior adviser to both the Firm and its clients in analyzing economic, social and political trends to assess the direction of financial markets and thus help guide investment and strategic decisions. Prior to joining Blackstone, Mr. Wien was Chief Investment Strategist for Pequot Capital and before that served for 21 years as Chief (later Senior) U.S. Investment Strategist at Morgan Stanley.

In 1995, Mr. Wien co-authored a book with George Soros on the legendary investor’s life and philosophy, Soros on Soros – Staying Ahead of the Curve. In 1998 he was named by First Call the most widely read analyst on Wall Street and in 2000 was ranked the No. 1 strategist by SmartMoney.com based on his market calls during that year. Mr. Wien was named to the 2004 Smart Money Power 30 list of Wall Street’s most influential investors, thinkers, enforcers, policy makers, players and market movers. He appeared in the “Thinker” category.

In 2006, Mr. Wien was named by New York Magazine as one of the sixteen most influential people in Wall Street. The New York Society of Security Analysts (NYSSA) presented Mr. Wien with a lifetime achievement award in 2008.

Mr. Wien received an AB with honors from Harvard College and an MBA with distinction from Harvard Business School. He is on the Investment Advisory Committee of The Open Society Foundation, and a member of the Investment Committees of Lincoln Center and The Pritzker Foundation. He is a trustee of the New York Historical Society, a Board Member of Phoenix House Foundation and Chairman of the Investment Committee of the JPB Foundation.
In 2001, Charles D. Kirkpatrick II, CMT, received the Charles H. Dow Award for his paper, *Stock Selection: A Test of Relative Stock Values Reported over 17 ½ Years*. The paper included results of a real-time test of stock selection criteria. Kirkpatrick explained that he maintained two lists, publishing selections in advance and tracking the performance after making the selections public. The results were summarized in two charts:

In the Dow Award paper, Kirkpatrick described the stock selection rules and sells criteria he followed.

Combining Criteria into model - The Parameters

Each week the entire list of available U.S. stocks (usually around 5,000) was screened for those stocks at or above the 90th percentile in relative price and earnings growth. In List 1 an advancing chart pattern was also required. Any stock not already on the list that met these criteria was added to the list. When relative price strength declined to or below the 30th percentile, relative earnings growth declined to or below the top 80th percentile, or the stock price pattern broke two previous lower reversal points, the stock was eliminated from the list. In List 2, the chart pattern was not used, but relative PSR was. The requirement for addition to the list was a relative PSR at or below the 30th percentile. The deletion criteria in List 2 were the same as in List 1 except they did not include the relative PSR since a high level did not necessarily suggest that a stock was facing an impending decline. Additionally, the deletion requirement for relative earnings growth was reduced to or below the 50th percentile since earlier experience had shown that a high threshold deleted stocks prematurely.
The chart pattern he used is detailed in the paper. Subsequent to the paper, Kirkpatrick published a book *Beat the Market: Invest by Knowing What Stocks to Buy and What Stocks to Sell* (FT Press, 2008) that provided additional techniques for stock selection. That book was used by the American Association of Individual Investors to create a screen that follows Kirkpatrick’s methods. The AAII value model screen duplicates the strategy described as List 2 in the paper.

The strategy buys stocks when:

- **Relative Strength > 90**: Kirkpatrick defines RS using the Price to Moving Average Ratio method first described by Robert Levy in a 1967 *Journal of Finance* article, “Relative strength as a criterion for investment selection.” He divides the weekly closing price by a 26-week moving average of the price. This calculation is completed for all stocks in his database, and the results are then sorted into percentiles. To pass this test, the stock must show an RS rank that is at the 90th percentile or higher.

- **Relative EPS Growth > 90**: The percentage change in earnings per share is calculated for each stock, and these values are then sorted into percentiles. Only stocks with earnings per share growth in the top 10% are considered to be potential buys.

- **Relative P/S Ratio < 30**: In this step, Kirkpatrick calculates the price-to-sales (P/S) Ratio of each stock in his investment universe and then rank orders the ratios into percentiles. He is looking to buy only those stocks which have a PS Ratio in the bottom 30%.

- **Market Cap > $500 million & Price > $5 per share**: These filters prevent speculative penny stocks from being bought and ensures that any stock in the portfolio is an investment that institutional investors should be able to hold.

The sell rules for this strategy rely only on the EPS growth rate and the RS ranking. Whenever these factors decline below a cutoff level, the stock is sold. The specific criteria Kirkpatrick defined in his work are to sell when RS falls below 30 or the EPS rank falls below 50. Whenever either of these events occurs, the market is telling you that something has changed for the worse in the company and the stock is unlikely to recover any time soon. By setting these cutoff levels so low, Kirkpatrick is trying to ensure that he will hold the winning stocks long enough to enjoy large gains without being shaken out during normal market reactions.

AAII has run this system monthly since the book was published, providing an independent assessment of the question of whether or not the strategy still works. The chart below was created with data from their website and begins with the year after Kirkpatrick published his paper. This data extends the real-time test and provides a true out-of-sample test of his method.
Relative strength has been proven to be a robust indicator and Kirkpatrick’s strategy has also stood the test of time. For additional information about this strategy and other work Charlie has completed, please visit his website, www.charleskirkpatrick.com.
Editor’s note: Jeremy Grantham is a widely-followed market analyst who has made a detailed study of bubbles. In the most recent quarterly letter to clients of his firm, GMO, he addressed the question of bubbles in the current market environment. The full newsletter can be downloaded by clicking here (free registration may be required).

Investment bubbles in a world that is, this time, interestingly different

Two significant items seem to be different this time. First, profit margins in the U.S. seem to have stopped mean reverting in the old, normal way, and second, some real estate markets have bubbled up and then stayed there at high prices. Both seem surprising events, even against what I would call “the laws of nature,” or at least the usual laws of capitalism. What is going on?

Tentative thesis

When capitalism is left in a pure form, capital, like water, seeks its natural level: Higher than average profits attract more capital and a glut eventually develops, pushing margins back down. Low profits deter capital flows until shortages develop and margins rise. It’s the very essence of capitalism. I used to say that profitability was the most dependably mean-reverting series in finance, and it used to be. When it stops, capitalism is broken, at least partially, and needs fixing as quickly as possible. The process occasionally gets jammed up, but not on its own – it needs some maladjusted, non-free market interference. Let’s start by looking at housing bubbles.

The housing markets are a good example of how the capitalist process can easily be gummed up. In this case, by zoning. As prices rose in the U.S., Spain, and Ireland, home building was allowed to respond. And respond it did, with Ireland and Southern Spain practically sinking under the weight of new housing and the U.S. building up to a million extra homes a year. This will break any bubble, and it did in all three cases. The U.S. bubble (see Exhibit 4) was particularly well-behaved. In contrast, in the U.K. there was no such response to much higher prices as home building was largely unchanged, and the influx of foreign buyers in London sustained the new higher prices. Over the last 10 years or so this has increasingly pushed new buyers out of the inner city and into doubling up, with bad consequences for the local availability of cheap labor (see Exhibit 5). There is always a level of increased housing density that will bring house prices down, and no doubt this will eventually happen in London when the people and businesses are exasperated enough to get politicians, both in central and local politics, to act. But this type of governmental arbitrage is much slower than the unconstrained working of supply and demand, and has far more unintended consequences. A classic example of unintended consequences when policy – not too well thought out – gets in the way of markets is revealed in Exhibit 6, which shows the increase in home ownership in the U.S. The growth in this ratio was artificially stimulated by low rates and low down payments, but now
looks set to fall to new lows, below those of the stable 1990s. It looks like a parable on the consequences of interfering with the laws of nature, or at least with a market equilibrium. (The Australian housing situation – very probably a bubble – is very interesting and different from both the U.S. type and the U.K. type and I will cover it another time.)
Now, let’s go back to the similar stickiness in U.S. profit margins, also bouncing along on a seeming new high plateau. I have discussed the interplay of the new stock option culture with its high level of buybacks and how this has reduced the level of capital spending and growth in the economy. Well, here also there are long-winded alternative arbitrage mechanisms, like a heart with clogged major arteries slowly developing a host of widened minor arteries. Private companies with more focus on the long term and more aggressive expansion will have a growing market share. Private equity will also have an incremental long-term advantage: they are already doing more capital spending than traded companies.

Venture capital will also have more opportunities than they had previously, when public companies scooped up more of the opportunities. But perhaps slightly faster than this slow capitalist adjustment, businessmen, politicians, and perhaps even some of the more real-world economists will increasingly complain of the current consequences of the stock option culture, especially low growth and low productivity. (Not that this factor will be the only contribution.) And here again, the problem is easy to fix at the corporate level, at least on paper, as already discussed. And what of the current Fed regime – the Greenspan-Bernanke-Yellen Regime – that promotes higher asset prices and lower borrowing costs, which facilitate stock buybacks amongst other speculative forces? Well, this regime, too, will change. Regression of regime, if you will. Painfully, politicians, the public, businessmen, and possibly even some economists will recognize the current regime as a failed experiment. Come back in 30 years and we will of course have a different regime (perhaps even the third or fourth different one), and we can be pretty sure that short interest rates will be between 1 and 2% after inflation once again; asset price manipulation will be seen as a spectacularly painful dead end; and the embedded return on virtually
all asset classes up to and including farms and forests will yield 2% a year or so more than they do today, as they have averaged since time immemorial before the Greenspan-Bernanke-Yellen era. But as regressions go, I certainly prefer the easy and quick old-fashioned way of high profits being naturally competed away.

Jeremy Grantham co-founded GMO in 1977 and is a member of GMO’s Asset Allocation team, serving as the firm’s chief investment strategist. Prior to GMO’s founding, Mr. Grantham was co-founder of Batterymarch Financial Management in 1969 where he recommended commercial indexing in 1971, one of several claims to being first. He began his investment career as an economist with Royal Dutch Shell. He is a member of the GMO Board of Directors and has also served on the investment boards of several non-profit organizations. He earned his undergraduate degree from the University of Sheffield (U.K.) and an MBA from Harvard Business School.
THE DEATH OF THE ZIMBABWE DOLLAR
BY BRYAN TAYLOR, Ph.D.

Editor’s note: this article was originally published at the Global Financial Data blog and is reprinted here with permission.

The government of Zimbabwe announced this week that they were finally demonetizing the Zimbabwe Dollar. Although the United States Dollar replaced the Zimbabwe Dollar in every day transactions back in 2009, banks still carried accounts that were denominated in Zimbabwe Dollars. Beginning on June 15, 2015, for only 35 quadrillion (35,000,000,000,000,000) Zimbabwe Dollars bank customers will receive one free portrait of George Washington. This opportunity expires in September.

Believe it or not, Zimbabwe will not get in the Guinness Book of World Records for the most insane currency conversion. Hungary holds this dubious record because 400,000 quadrillion pengo were required to obtain one forint back in 1946 when Hungary went through its own currency conversion.

Currently, the United States Dollars and South African Rand are used in Zimbabwe for everyday transactions. These two currencies are legal tender in Zimbabwe along with Australian Dollars, the British Pound, the Botswana Pula, Chinese Yuan, Indian Rupees and Japanese Yen. The Zimbabwe Dollar is now officially dead.

The Zimbabwe Dollar Is Born

Zimbabwe was originally a British colony known as Rhodesia, named after Cecil Rhodes who obtained a mining concession from a local king. The colony of Rhodesia declared its independence on November 11, 1965, but because it did not allow blacks any representation in the government, Britain imposed sanctions against Rhodesia. On March 3, 1978, Ian Smith signed an agreement to provide black majority rule in Rhodesia. The country was renamed Zimbabwe Rhodesia on June 1, 1979, and Zimbabwe declared its independence on April 17, 1980.

The country’s currency was originally the Rhodesia Pound which was introduced at par with the British Pound Sterling. The Rhodesia Dollar (RHD) replaced the Rhodesia Pound on February 17, 1970 with 2 Rhodesia Dollars equal to 1 Rhodesia Pound. The Zimbabwe Dollar in turn replaced the Rhodesia Dollar at par on April 18, 1980. When this conversion occurred, a Zimbabwe Dollar was valued at 1.47 United States Dollars, but because Zimbabwe had higher inflation than the United States, the Zimbabwe Dollar steadily depreciated against the U.S. Dollar.

Inflation Explodes

The combination of decreases in farm production following large land redistributions, a decline in the production of goods, a collapse of the banking system, involvement in the Second Congo War in 1998, and a drought in 1999, led to a steady
decline in production. Zimbabwe suspended foreign debt repayments in February 2004, resulting in compulsory suspension from the IMF. This combined with sanctions imposed by the United States, the IMF and the European Union led to large budget deficits which could only be covered by printing money, eventually leading to hyperinflation.

The inflation rate in Zimbabwe averaged around 10% in the 1980s, around 20% to 30% between 1990 and 1997, and 50% between 1998 and 2000. In 2001, the inflation rate exceeded 100%, and in 2003 it was almost 600%. At that point, hyperinflation kicked in. Inflation rose to 1281% in 2006, and 66,000% in 2007. In 2008, the money supply grew by 658 billion percent and inflation hit an annualized 80 billion trillion percent (89,700,000,000,000,000,000,000) toward the end of 2008. At that point, Zimbabwe Dollars were about as valuable as toilet paper.

**Hyperinflation Makes Life Miserable**

The main cause of Zimbabwe’s inflation was the excessive money growth of the Zimbabwe Dollar, but officials tried to place the blame elsewhere. In 2007, for example, Zimbabwe declared inflation illegal (!), outlawing price increases on some commodities. The government even arrested some executives for increasing prices on commodities.

Other problems occurred. People found it difficult to take money out of ATM machines because the ATMs couldn’t handle values in billions and trillions. Customers received a “data overflow error” and weren’t able to withdraw anything. By the time the ATM machines were fixed and the ATMs allowed customers to withdraw Z$100 billion per day, that amount wasn’t enough to cover the cost of a loaf of bread. If a customer wrote a check to purchase something, they were required to write the check for twice the cash price of the item to cover the impact of inflation by the time the check cleared.

During the 2000s, Zimbabwe went through four currencies in four years. On July 31, 2006, Zimbabwe introduced a new Dollar with 1000 old Zimbabwe Dollars (ZWD) equal to 1 Second Zimbabwe Dollar (ZWN). On August 1, 2008, 10 zeroes were removed with 1 Third Zimbabwe Dollar (ZWR) equal to 10 billion Second Zimbabwe Dollars. On February 2, 2009, a Fourth Zimbabwe Dollar (ZWL) was introduced, removing 12 zeroes, with 1 Fourth Zimbabwe Dollar equal to 1 trillion Third Zimbabwe Dollars. Thus 1 Fourth Zimbabwe Dollar was equal to 10 trillion trillion (10,000,000,000,000,000,000,000) first Zimbabwe Dollars.
Dollar One, Dollar Two, Dollar Three, Dollar Four

The hyperinflation produced a dazzling array of currency denominations. The highest denomination for the first Zimbabwe Dollar was 100,000 Dollars. When the first Zimbabwe Dollar was converted into the second Zimbabwe Dollar at 1000 to 1, paper currency equal to One Zimbabwe Cent was printed so old 10 Zimbabwe Dollar notes could be converted. Within a year, the Reserve Bank of Zimbabwe was printing a 100 Billion Dollar note. In total, 32 different denominations of the Zimbabwe Dollar were printed within one year.

The third Zimbabwe Dollar went through 27 denominations ranging from 1 Dollar to 100 Trillion dollars. Coins issued under the first Zimbabwe Dollar were made legal tender under the Third Zimbabwe Dollar, increasing their value 10 trillion-fold. The machines used to print currency were used continuously, causing them to break down, and creating greater shortages of currency, especially since the Reserve Bank was unable to obtain repair parts for the machines.

The 100 Trillion Dollar note was the highest denomination issued for the third Zimbabwe Dollar. It has become a novelty item which can be obtained from dealers on EBay. Although its face value is less than one penny, the banknotes generally sell for around $30.
The fourth Zimbabwe Dollar died a quick death, only reaching the Z$500 denomination before the currency was cast aside. Foreign currency was effectively legalized as a de facto currency on September 13, 2008, and on January 1, 2009, the Reserve Bank of Zimbabwe allowed U.S. Dollars to circulate freely throughout the country. The Fourth Zimbabwe Dollar remained legal tender until June 30, 2009 by which time it has lost 95% of its value in the five months of its existence. By then, transactions were almost exclusively in U.S. Dollars, the Zimbabwe Dollar having been abandoned.

Clever Financial Calculations

With inflation galloping ahead on a daily basis, and the Reserve Bank of Zimbabwe updating exchange rates infrequently, it was difficult to know how little the Zimbabwe Dollar was really worth. With no official figure available, some banks figured out a clever way of calculating the exchange rate by using the Old Mutual Implied Rate (OMIR). Shares of the Old Mutual insurance company were traded on both the Harare (Zimbabwe) Stock Exchange and on the London Stock Exchange. By comparing the Zimbabwe Dollar price of Old Mutual Stock on the Harare Stock Exchange with the British Pound price of Old Mutual Stock on the London Stock Exchange, an implied exchange rate was calculated which was used to carry out transactions.

The Dollar is Dead, Long Live the Dollar

Since 2009, Zimbabwe has had no currency of its own. It has had to rely upon paper currency imported from other countries to act as a medium of exchange. Since foreign currency is scarce, the economy has suffered from deflation rather than hyperinflation because currency was scarce. Another problem Zimbabwe has faced since 2009 is that the country has no locally minted coins to carry out every day transactions. Stores improvised by using pieces of candy to make change rather than using coins. In 2015, the Reserve Bank of Zimbabwe tried to alleviate the coin shortage by putting new “bond” coins into circulation; however, as one person put it, consumers were distrustful of any coins that didn’t have an American president on them.

Today, the United States Dollar is the medium of exchange in Zimbabwe and inflation has been defeated. Prices declined in Zimbabwe by 0.8% in 2014 after rising 0.3% in 2013. Zimbabwe has gone from being the king of hyperinflation to having a lower inflation rate than the United States! Will Zimbabwe reintroduced a new Zimbabwe Dollar in the near future? Probably not. People in Zimbabwe have lost all trust in the government’s ability to control inflation. Other countries that dollarized as a result of inflation, such as Ecuador, remain dollarized years after the U.S. Dollar was introduced.

In Zimbabwe the saying should be, “The (Zimbabwe) Dollar is Dead, Long Live the (U.S.) Dollar.”
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.
Editor’s note: Dr. Taylor’s research inspired a search for hyperinflation in the world today. That search led to Venezuela and that country’s stock market shows the impact of hyperinflation.

Technical analysts study intermarket analysis because stocks, bonds and commodities tend to display recurring relationships. StockCharts.com explains that these relationships depend on inflation.

Inflationary Relationships

The intermarket relationships depend on the forces of inflation or deflation. In a “normal” inflationary environment, stocks and bonds are positively correlated. This means they both move in the same direction. The world was in an inflationary environment from the 1970’s to the late 1990’s. These are the key intermarket relationships in a inflationary environment:

- A POSITIVE relationship between bonds and stocks
- Bonds usually change direction ahead of stocks
- An INVERSE relationship between bonds and commodities
- An INVERSE relationship between the US Dollar and commodities

POSITIVE: When one goes up, the other goes up also. INVERSE: When one goes up, the other goes down. Interest rates move up when bonds move down
In an inflationary environment, stocks react positively to falling interest rates (rising bond prices). Low interest rates stimulate economic activity and boost corporate profits. Keep in mind that an “inflationary environment” does not mean runaway inflation. It simply means that the inflationary forces are stronger than the deflationary forces.

**Deflationary Relationships**

Murphy notes that the world shifted from an inflationary environment to a deflationary environment around 1998. It started with the collapse of the Thai Baht in the summer of 1997 and quickly spread to neighboring countries to become known as Asian currency crisis. Asian central bankers raised interest rates to support their currencies, but high interest rates choked their economies and compounded the problems. The subsequent threat of global deflation pushed money out of stocks and into bonds. Stocks fell sharply, Treasury bonds rose sharply and US interest rates declined. This marked a decoupling between stocks and bonds that would last for many years. Big deflationary events continued as the Nasdaq bubble burst in 2000, the housing bubble burst in 2006 and the financial crisis hit in 2007.

![Graph showing the relationship between stocks and bonds](image)

The intermarket relationships during a deflationary environment are largely the same except for one. Stocks and bonds are inversely correlated during a deflationary environment. This means stocks rise when bonds fall and vice versa. By extension, this also means that stocks have a positive relationship with interest rates. Yes, stocks and interest rates rise together.

Obviously, deflationary forces change the whole dynamic. Deflation is negative for stocks and commodities, but positive for bonds. A rise in bond prices and fall in interest rates increases the deflationary threat and this puts downward pressure
on stocks. Conversely, a decline in bond prices and rise in interest rates decreases the deflationary threat and this is positive for stocks. The list below summarizes the key intermarket relationships during a deflationary environment.

- An INVERSE relationship between bonds and stocks
- An INVERSE relationship between commodities and bonds
- A POSITIVE relationship between stocks and commodities
- An INVERSE relationship between the US Dollar and commodities

These relationships hold most of the time because the third inflationary environment is rarely seen.

Hyperinflationary Relationships

There are times when markets have little relationships to each other. A breakdown in intermarket relationships occurs in countries with hyperinflation. Under U.S. Generally Accepted Accounting Principles (GAAP), hyperinflation is defined as times when a country’s cumulative 3-year inflation rate exceeds 100%.

Over the past year, the Caracas Stock Exchange Stock Market Index has soared nearly 600% while the S & P 500 index is almost unchanged. The gain in Venezuela has been driven by inflation.

Source: Bloomberg.com
Inflation increased by 108% in the 12 months ending in May, the latest available data according to an average of estimates by economists conducted by Reuters. This is the highest rate of inflation on record in Venezuela, topping the previous record of 103% set in 1996. Economists expect inflation to reach 150% or more before the end of the year.

Despite the high rate of inflation, gold has not performed well when priced in Venezuela’s currency, falling about 16% in the past year. This change is about the same as gold priced in U.S. dollars.

Inflation expectations are different when hyperinflation develops. Venezuela demonstrates that a rising stock market will not always be profitable since investors are unable to understand what their investments will be worth when they are able to sell. Gold is not a reliable inflation hedge when priced in a hyperinflating currency because the currency lacks a rational price. Gold bullion might be a reliable store of value under these conditions since it can be priced in any currency. However, technical analysis is unlikely to work in hyperinflation when standard economic theories break down.
ETICS CONTINUITY

“The essence of investment management, is the management of risks, not the management of returns.”
- Benjamin Graham

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How would you describe your job?

I work for an Asset Management firm where I work in a dual job as a technical analyst for the investment team and also as a buy-side trader who handles orders for the fund. I give recommendation to money managers based on my technical view after considering the direction of a stock’s trend, sector strength and my overall market view. For an institution such as my firm, outperformance is the key so I rely heavily on relative strength. There are a lot of opportunities to explore with relative strength. But more than that I believe the key to success is not the tools I use. It is the discipline to stick to the approach and a “think risk first” mentality. And, of course you need skill and experience to extract money from the market.

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

I am a trend follower at heart and have been 100% technical in my analysis for a decade. It serves me well and personally I believe technicals provide a better approach in terms of risk management because it is the approach that tells you when you are ‘wrong’ and should take action to control your risk. While other analysts might “double down” or “average lower” when faced with a loss, I have seen that strategy lead to disaster many times. By following trends, I avoid those disasters. Another advantage of technical analysis is that it focuses on trend and ignores non trending assets, avoiding assets that are underperforming.

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

1. Read as much as you can.
2. Getting a CMT designation is valuable for your career as a trader or technical analyst.
3. You should spent time developing trading strategies that fit your personality.
4. Find a mentor and spend time around winning traders.

I believe it is important to understand that trading or investing is a marathon, not a sprint.

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

I love digging into the details of consistent strategies and I found several in the work of Charles Kirkpatrick. In addition to his book on technical analysis, I found his book *Beat the Market* to be very useful. I especially liked his approach to relative strength. It is great to discover a superior stock selection strategy that has predictive value. I have used relative strength
for a decade and his book gives me more confidence that this tool will continue to work in the future. Of course, there will always be a period of time when any strategy doesn’t work and that’s why we should have risk control techniques.

Risk control can be done in many ways, including holding cash, using stop-loss levels or hedging against a broad market decline. Technical analysis helps with the implementation of any of those techniques.

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

I believe you should focus on trend analysis. Simple chart pattern analysis is always useful. There is nothing complicated in trend analysis. Trend following has worked for hundreds of years and still works today. But you will need a large dose of discipline and strict money management rules to successfully implement a trend-following strategy.

Nutapol Kamwongsa, CMT is a technical analyst and trader at UOB Asset Management, a mutual fund firm, where he specializes in technical analysis of stock trends. His focus is on relative strength and sector rotation. Prior to this position, he worked as a prop trader and stockbroker. He can be reached at cardnoi@yahoo.com.

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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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In the same way that recipes can improve when ingredients and techniques are shared, disclosing technical analysis concepts for comparing U.S. stock sectors can help perfect portfolio modeling. By ranking sectors by total returns over several time horizons, and graphing each sector to check price divergence with RSI, technical analysts can have an additional tool to gauge which sector is most likely to fall out of leadership and which sector may rise out of the laggard sphere.

Bloomberg’s GRR function can be used to rank sectors into different total-return buckets of one month, three months, six months, nine months and 12 months. A reusable template can be developed through Bloomberg’s Excel plug-in. An example is shown to the right.

In the table above, sectors that rank within the top three by returns in three or more time frames are identified as sector leaders and are shown in green. Sectors that rank within the bottom three by returns in three or more time frames are identified as sector laggards and are shown in red. The remaining sectors are identified as neutral and are shown in blue.
The next stage of the recipe involves checking the leaders and laggards for RSI divergence. A monthly candlestick chart of the Information Technology sector is shown as example of how to apply this technique. Two potentially bearish factors can be seen in the chart.

First, the absolute percentage between the latest closing price of the sector index and the 10-month moving average was extended with a reading of 4.09%. The second factor is the divergence between price and RSI. These potentially bearish signals can alert traders to consider addressing the need to adjust their positions.

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Introduction

US financial markets are critical to the functioning of our entire economy, providing more credit, for example, than banks do. Our unusually large financial markets have been an American competitive advantage for years, providing a cost-effective means of matching investors with worthy companies and projects. Therefore, the current debate about whether market liquidity is drying up is an important one, since the ability to buy and sell securities is central to market functioning. This primer provides an introduction to the issues by addressing the following questions.

- What is market liquidity?
- Why do we care about it?
- Has it actually declined?
- What do the recent bouts of market volatility mean?
- Why would we expect market liquidity to be down?
- Will market liquidity decline further?
- What factors might offset tightening liquidity?
- What should be changed to improve market liquidity?

Before going systematically through these questions, the following section provides an overview and recommendations.

Overview and recommendations

Market liquidity refers to the ability of buyers and sellers of securities to transact efficiently and is measured by the speed with which large purchases and sales can be executed and the transaction costs incurred in doing so. These costs include both the explicit commission or bid/ask spread and the, often larger, loss from moving the market price by the act of making the bid or offer for a large block. This latter effect ties market liquidity to price volatility, as transaction volumes lead to bigger price movements when markets are illiquid.

We care about market liquidity because it affects the returns for investors, such as those saving for retirement or college, and the costs to corporations, governments, and other borrowers. Further, illiquid markets are more volatile. At the extreme, volatility can help trigger or exacerbate financial crises. Even the average level of volatility matters, as it is factored into the interest rates demanded by investors and paid by borrowers.
Market liquidity is a complicated issue in part because it is not clear what is happening to underlying liquidity. Pretty much everyone agrees that markets are less liquid than they were in the run-up to the financial crisis, but it is not clear that this is a problem, since those liquidity levels were unsustainable and evaporated quickly under stress. The harder parts are to compare liquidity to an optimal sustainable level and to project liquidity into the future. There is no agreement on either the optimum level or the future course of market liquidity.

Despite the uncertainties, policymakers are right to take this issue seriously and to worry about the risks. There appears to have been a decline in underlying liquidity in the markets and this seems highly likely to worsen to some extent. There are numerous factors at work, including the evolution of the structure of financial markets and the effects of unusual economic conditions, especially extremely loose monetary policies and massive direct central bank purchases of bonds. I also believe we have overshot in our regulations in a way that will cramp market liquidity excessively, producing more social costs than the benefits of greater financial stability. To be clear, most of what has been done is positive; it is a matter of recalibrating the details to reduce the social costs while keeping the core benefits. Unfortunately, this cost-benefit analysis is complex and still subjective at this point, in part because so much of what is happening to liquidity remains ambiguous and the largest effects are likely to be in the future.

Whatever the overall conclusions about regulation, it is clear that the cumulative effects of a series of regulations have made it more difficult and expensive for banks and large securities dealers to act as market makers. (These rules include the liquidity coverage ratio, the net stable funding ratio, the supplementary leverage ratio, various changes to the capital rules under the Basel capital accords, the Volcker Rule, and others.) Smaller dealers, hedge funds, and similar firms will pick up some of the slack as the large dealers pull back, but there are real limitations on their ability to do so cost-effectively. The markets can also adapt, such as by moving to agency rather than principal models and by embracing electronic markets, but, again, there are some serious limits on how far these moves can go.

The net result should logically be decreased liquidity and we have already seen much lower securities inventories held for market-making purposes by dealers along with some other signs of lessened liquidity. There have also been at least four incidents in the last couple of years in which markets showed extreme volatility that may have been exaggerated by lower liquidity, such as the “taper tantrum” in the bond markets. It is difficult to know if these are isolated incidents or the tip of a dangerous iceberg. On the other hand, there are a number of indicators, such as average bid/ask spread, that do not show signs of a less liquid market, so while there appears to have been an overall decrease in liquidity, the evidence is ambiguous.

Thus, the effects we have seen already are not deeply worrisome on their own. The bigger issue is the probability that market liquidity will considerably worsen going forward. First, the very loose monetary policies of central banks around the world appear to have provided considerable support for market liquidity while also holding down price volatility. When monetary policies eventually tighten, market liquidity is likely to be more of a problem. Second, banks and large dealers
are almost certain to cut back further on their liquidity provision and to raise their prices over the next couple of years. Many of the rules that increase their costs are only now being finalized or are being phased in over time. Further, dealers know they will lose customers if they make one big move, rather than spreading the pain over multiple years, especially if their competitors take smaller steps.

In sum, there are good reasons to worry about market liquidity and to believe that policymakers may have unintentionally overshot. However, the disaster scenarios that some suggest do not seem plausible, nor does any regulatory overshoot mean that we have to redo financial reform in major ways. This is a matter of taking the issue seriously and recalibrating a series of technical measures to reduce the damage to market liquidity without increasing the risks to financial stability in any significant way. At this point, the key is to revisit the various key regulations and to seriously review the costs and benefits of the choices that were made about the details.

**What is market liquidity?**

In financial terms, the “liquidity” of any asset refers to the combination of the degree of ease with which it can be sold (or bought) in a timely manner and the level of costs associated with that sale, either in terms of transactions costs or the acceptance of a lower price in order to find a buyer in a reasonable time. Houses are relatively illiquid assets, since they can take months to sell, there are quite substantial transaction costs, and, depending on market conditions, the seller may have to take a hit to move the house in a reasonable time period. On the other hand, a US Treasury bond is highly liquid. It can easily be sold within hours, transaction costs are minimal, and there are many potential buyers who are willing to pay roughly the bond’s theoretical market value.

Recent concerns about “market liquidity” refer to the functioning of markets for purely financial assets, particularly bonds issued by both governments and corporations, also known as “fixed income” instruments since they promise a fixed set of payments to the owner. Sometimes these discussions have broadened out to reference derivatives based on these bonds or the related markets in foreign currencies and commodities.

It is important to understand that the fixed income market is quite different from the stock markets with which most people are more familiar. There is usually one type of common stock for each public company (occasionally two); whereas firms and governments issue many distinct bonds each. They differ in maturity, interest rate, and other material features, so that they are not inter-changeable, even though they are affected by some common factors, particularly those related to the creditworthiness of the issuer.

One of the major effects of this market structure is that the great majority of bonds are bought and sold through dealers rather than traded on exchanges, since there is not enough transaction volume to support exchange trading of each of the individual bonds. These dealers do not normally charge a commission, but are paid through their expected profits from bidding for bonds at one price and offering to sell them at a higher one. The “bid/ask” spread between the two
quotes can be viewed as consisting of two parts. A portion is the equivalent of a commission and is necessary to cover expenses and provide a reasonable profit for helping customers to execute transactions. The second part compensates dealers for the risk that they will lose money on a transaction by buying too high or selling too low, as well as covering the costs of holding a securities inventory to facilitate transactions, including the necessary levels of capital and liquidity to back their inventories. Therefore, one of the significant measures of market liquidity is the average bid/ask spread, since it represents an important transaction cost.

**Why do we care about it?**

Most of the credit provided to businesses and households in this country is ultimately supplied through financial markets. (This is a contrast with the rest of the world, where credit primarily ends up on bank balance sheets). The suppliers of credit are insurers, pension funds, mutual funds, individual investors, and others. The ultimate sources of all these funds are households who rely on their returns from these securities to provide funding for retirement, educational expenses, and other needs. So the functioning of these markets has significant impacts on the economy as a whole. When liquidity declines, there are a series of effects:

**Direct transaction costs for investors rise.** In some cases, external factors, such as increases in regulatory requirements for trading, directly push bid/ask spreads higher, which raises transactions costs for investors, which is one aspect of liquidity. Further indirect effects result from cutting transaction volumes, which may also lengthen the time necessary to complete a transaction.

In other cases, the causality runs in the other direction, and markets initially become less liquid in some other way, such as through a rise in the volatility of price movements. Bid/ask spreads would then usually increase as well, for several reasons. Transaction volumes would tend to fall, so the dealer’s fixed costs would be spread over fewer transactions, raising the cost per transaction. Further, risk premiums would rise as well to cover the higher price volatility, as may also be true of the capital and liquidity charges, at least if illiquidity persists.

Whatever the derivation of the higher transaction costs, they flow through to lower returns for investors when they buy or sell the instrument.

**Volatility of prices increases.** The biggest factors moving securities prices are those that affect perceptions of their fundamental value, such as good or bad news about a firm’s creditworthiness or an overall move in interest rates. However, the rapidity and extent of price movements is also influenced by market liquidity. If there are many potential buyers and sellers and they can transact quickly, easily, and cheaply, then price movements tend to be smoother as news events are factored into prices quickly based on the market consensus about their significance. Similarly, if a market participant wants to buy or sell a large block of bonds, they can do so without greatly moving the price.
As with transaction costs, sometimes volatility directly changes, perhaps due to higher uncertainty about economic or monetary policy conditions. At other times, volatility is affected by changes in bid/ask spreads or other elements of liquidity. When it is more expensive or harder to trade, then fewer traders are willing or able to step in when prices move out of line by modest amounts, allowing prices to swing more widely.

Whatever the cause of increased volatility, it generally reduces the return for investors who are buying or selling in any significant size, as their initial purchases or sales will move the market price further in the wrong direction for them.

**There is greater potential for financial crises.** Illiquidity in financial markets can help trigger or exacerbate a financial crisis by creating actual or paper losses at banks or other financial institutions. If a bank needs to raise cash quickly, perhaps to meet deposit outflows in the event of a loss of confidence in that institution, they will likely need to sell securities, especially if they have an excessive mismatch between the maturities of their assets and liabilities. In illiquid markets, this would require “fire sales” in which the seller accepts a significantly lower price in order to get cash quickly. In addition to the direct loss to the troubled institution, which may threaten its solvency, rapid declines in securities prices can affect other institutions, either because they too need to sell or because they use “mark to market” accounting for their assets and therefore paper losses directly affect their capital positions.

**Bond prices fall as Investors demand higher liquidity risk premiums.** When investors decide the minimum interest rate they will accept on a bond, they take account of multiple factors. First, they need a base return that compensates them for giving up the use of their funds until the maturity of the bond, often known as the “time value of money.” Second, they need to be compensated for credit risk, the possibility that they will not be repaid in full. Third, they may charge an interest rate risk premium to reflect the potential for a decline in value if interest rates rise. Fourth, they will charge a “liquidity premium” based on the degree of difficulty or cost they will encounter if they decide to sell their investment early. (On top of these basic elements, there may be others, such as foreign exchange risk premiums, depending on circumstances.)

If markets become less liquid, then investors over time should increase the liquidity risk premium that they demand, raising their overall required interest rate. This would cause the price of existing bonds to fall, since lower prices are needed to raise the effective interest rate on the amount invested.

**Capital raising becomes more expensive.** Similarly, an increased liquidity risk premium means investors would demand higher interest rates when businesses and governments issue new bonds. This would directly flow through as a cost to borrowers, including households whose borrowing is financed indirectly through financial markets, such as is true for most mortgages.

**Has market liquidity actually declined?**
Almost everyone believes that market liquidity has fallen overall since the period prior to the global financial crisis of 2007-9. However, there is a great deal of controversy about the extent to which this has occurred and whether it represents a bad thing or a return to normal conditions after an unsustainably high degree of liquidity in markets. (Fender et al., 2015, provides a good overview of the changes since the crisis.)

The picture looks different depending on which aspect of liquidity one focuses on and which markets one considers.

**Level of dealer inventories.** This is not a direct measure of liquidity, but rather an indicator of the potential for dealers to provide liquidity. Large inventories make it easier for a dealer to supply bonds if customers desire them. They also tend to be an indicator of the willingness and desire of dealers to make markets. With the exception of government bonds at that national level, dealer inventories are down pretty much across the board in the last few years. The decline was very substantial in many types of bonds, particularly corporate bonds. Sovereign bonds have shown little decline, but a large part of this is likely due to new regulatory requirements and other pressures to hold large volumes of government bonds at the banks and major dealers. The chart below provides some data on inventories from Fender, et. al., 2015.

![Chart: Dealer inventory - low tide for corporate bonds?](chart.png)

The black vertical lines correspond to 15 September 2008 (the date of the Lehman Brothers bankruptcy).

1 Net dealer positions of corporate and domestic sovereign bonds. 2 Sample of 10 primary dealers and banks.

Sources: CGFS Study Group member contributions based on national data; BIS calculations.
Bid/ask spreads. On the other hand, there has been much less of a movement in bid/ask spreads. On this basis, one would not presume there were any concerns about a decline in market liquidity, except in certain market segments which were already less liquid. The chart above, also from Fender, shows corporate bid/ask spreads over time.

Volatility on “normal” days. Price movements have been relatively calm for the most part, again not indicative of a current problem with liquidity.

Bouts of extreme volatility. On the other hand, there have been a few incidents, described in the next section, in which price movements have been extreme enough to trigger fears that markets have indeed become less liquid.

Average size of transactions. There has generally been a decrease in the size of transactions in many market segments, which may indicate that investors have found the need to break up their transactions due to the inability or high cost of moving large blocks in a single transaction. However, there could be other factors leading to this reduction in size, including the rise of trading strategies employing frequent trades in smaller sizes to try to profit from fleeting arbitrage opportunities.
**Time to completion of transactions.** Although there do not appear to be good measures, anecdotal evidence suggests some slowing down of the disposition or acquisition of large positions. This would be consistent with smaller average transaction sizes.

Overall, the decline in liquidity has been most marked in riskier market segments, as demonstrated above in the charts from Fender, which showed little or no decline in the liquidity of government bond markets of developed economies, but noticeable declines in liquidity of corporate bond markets. This results both from factors specific to such markets (including changes in regulatory requirements that raise the required level of capital for banks and dealers holding some instruments) and as a reflection of an overall “flight to quality” by many bond investors after the financial crisis, as well as from various other factors.

Similarly, the IMF’s Global Financial Stability Review of October 2014 highlighted concerns about market liquidity particularly in the high yield bond and emerging market bond areas.

**What do the recent bouts of market volatility mean?**

There have been at least four occasions in the last several years that may indicate a greater vulnerability of fixed income markets to periods of excessive volatility as a result of regulatory and other market changes. As noted below, however, each of the episodes were associated with major news events, often related to central bank activities, that make it difficult to pin down what portion of the volatility was “excessive” and what was a reasonable response to fundamentals. These are:

**The “taper tantrum”**. When then-Chairman Bernanke testified before Congress in May 2013 that the Fed might “taper” off its purchases of bonds in the markets more quickly than some in the markets had expected, there was a quick movement down in government bond prices, which carried over to most other categories of bonds, which generally price on the basis of an interest rate spread over the government bond rates. The 10-year Treasury bond saw its market price fall about 3% in the course of two days, with most of this occurring in the first few hours after the testimony. This may not seem large, but is quite a sharp move for a government bond market.

**October 15, 2014 Treasury market rally**. This incident is so complex, and the causes so unclear, that it still does not have a single nickname. A variety of factors led to a rise in Treasury market prices roughly equal to the entirety of the taper tantrum within about one hour, with prices subsequently gyrating strongly over the remainder of the day. US authorities will soon conclude a study of this episode that may shed more light on the underlying causes.

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1 Some analysts who have reviewed this paper in draft format have nominated additional examples, such as sharp price movements in Japan connected with the announcement of changes in the investment strategy of the government pension plan.
Swiss Franc revaluation. For several years, the Swiss central bank held down the value of the Swiss franc versus the euro, in order to mitigate a loss of competitive position by Swiss exporters versus those in the eurozone. This required the Swiss to buy large sums of euros in exchange for francs. Eventually, the holdings of euros grew very large, as did the likelihood that the central bank would eventually have to take a loss on these holdings, in part due to the anticipated advent of Quantitative Easing by the European Central Bank. As a result, in January of 2015, the Swiss National Bank gave up and allowed the Swiss franc to rise, switching to a policy of intervening sporadically if market forces appeared to be excessive. This retreat by the central bank caused the Swiss franc to rise 30% in the first 13 minutes, with knock-on effects in other foreign exchange markets. (The franc gave back some of these gains over the course of the day, but most of the initial impact remained.) Some observers believe that the speed and extent of the initial price movement would have been considerably less in more liquid markets. This is hard to judge as developed economies rarely undertake this kind of capping of foreign exchange rates anymore and therefore it is difficult to compare with other instances where such a cap was unexpectedly withdrawn.

Volatility of European government bonds in early 2015. Prices of government bonds in the core of Europe fluctuated sharply in the first half of 2015, with a cumulative move in German 10-year government bond prices of 7-8% from peak to trough. Within this overall trend, there were fairly rapid moves on some days. Some ascribe the sharpness of the moves to underlying liquidity problems, although the argument is less strong than in the case of the two incidents involving US Treasury bonds.

Outside these markets, there was also the “flash crash” in the stock markets in May 2010 and smaller versions since.

At the end of the day, it is difficult to tell how much meaning to ascribe to these events. It is certainly possible that they represent the tip of the iceberg and that once we return to more normal economic and monetary conditions, these types of volatility events will be more frequent and potentially much more painful. However, it is also dangerous to generalize too much from a few data points. One could certainly argue that at least some of the events merely showed the market reacting sensibly and swiftly to new economic news, such as the withdrawal of the Swiss central bank as a provider of massive artificial support to the euro or the news about the Fed’s intentions for its future bond purchases. It is probably best to view these incidents as red flags, and indicators of the degree to which volatility might become more normal, rather than drawing stronger conclusions from this limited set of data points.

Why would we expect market liquidity to be down?

There are two broad and compelling reasons to expect market liquidity to have declined, especially for securities that were already less liquid. In addition, there are a number of other factors at work that are of lesser significance or which can push liquidity in either direction depending on the particular circumstances.
The first compelling reason is that market liquidity in the US was greater in the run-up to the financial crisis than it had ever been, quite substantially so in many markets. In part, there was clearly a self-reinforcing cycle of increased liquidity leading to lower liquidity risk premiums demanded by dealers and investors, leading to still more liquidity. A second major component was a belief in the “great moderation,” that central banks had determined how to substantially reduce volatility in the economy and consequently in financial markets. Lower volatility begets greater liquidity as dealers and investors become more willing to take positions without fear of excessive losses. Both of these factors have vanished or reversed, helping to explain the lower liquidity levels today.

The second compelling reason is that the dealers who have dominated fixed income market making are virtually all subject to a whole set of new regulations that make it more difficult and more expensive to provide that service. It would be surprising if such a distinct deterioration in their business position did not lead to a significant retrenchment and repricing of their liquidity provision to the markets. As noted earlier, dealer inventories in most markets have come down quite markedly, in line with this expectation.

There are quite a number of new regulations that have a significant impact on the cost of doing business as a market maker:

**Basel III capital accord.** The Basel Committee on Banking Supervision is the global coordinating body for bank regulators. Although it cannot directly bind national governments, its rules are virtually always adopted, sometimes with modifications. The Basel Committee promulgated the third version of the Basel Capital Accords after the financial crisis and they are well along the phase-in process today. The latest version significantly raises the amount of capital required by banks and major securities dealers, which makes it more expensive for them to do business. (See Elliott, 2010 for a primer on bank capital.)

**Basel 2.5.** The capital required for assets held in a bank’s “trading book” was considerably lower under Basel II than was the case for other assets, such as securities that were intended to be held to maturity. After the financial crisis, there was such a strong consensus that these capital levels needed to be raised sharply, that new rules were put in place to modify Basel II in this area even before the Basel III accord was agreed. (Hence, the nickname of Basel 2.5.) Trading book assets now require multiples of the capital previously mandated, representing one of the sharpest percentage changes in capital requirements. In addition, the Basel Committee is currently conducting a review of these requirements and there is an expectation of still further increases.

**Leverage ratio.** The Basel Committee also concluded that its core approach, which uses risk weightings so that more capital is required for riskier assets and less for safer ones, was too subject to gaming or error when used on a stand-alone basis. Therefore, a “leverage ratio” has been adopted as well which, in essence, requires the same level of capital for all assets, regardless of risk. Banks must meet the higher of the capital levels required by the risk-weighted approach and that
calculated by the leverage ratio. In the US, regulators went further and established a “Supplementary Leverage Ratio” (SLR) for the largest banks that is higher still. The SLR has particular impact on trading, since most of the instruments that are traded, or are used to hedge trading positions, involve securities with very low credit risk. These have correspondingly low capital requirements under the risk-based rules, but do not receive any benefit under the leverage ratio.

**Liquidity coverage ratio.** Basel III also includes two completely new requirements that are intended to ensure that banks and major dealers have high levels of liquid assets to meet potential demands for funds in a crisis and that their overall business models do not have an excessively large mismatch between the maturity of their assets and their liabilities. (See Elliott, 2014, for a primer on bank liquidity requirements, which also apply to the major dealers.) The Liquidity Coverage Ratio (LCR) is a stylized stress test to ensure that a bank has the ability to handle a 30-day liquidity crisis in the markets. Under this test, assets which are longer-term or less liquid effectively need to be funded by longer-term liabilities, which tend to be more expensive. This raises the cost of holding inventories of most bonds.

**Net stable funding ratio.** The second liquidity-related requirement in Basel III is a rule intended to ensure that banks and major dealers do not have an excessive mismatch between the maturity of their liabilities and that of their funding. This produces a similar effect to the LCR, by raising the cost of funding for longer-term instruments, such as most bonds.

**Single counterparty credit limits.** The Dodd-Frank Act required that the rules be tightened on the amount of credit exposure that the largest banks and their affiliates could take to any one counterparty. Bonds in dealer inventories count against this limit as do many of the instruments used by dealers to hedge their risk of holding those inventories. The tighter requirements mean that the largest banks have to ration their credit exposures more than they did, which adds an opportunity cost when dealing activity uses up some of this room under the exposure limits.

**The Volcker Rule.** Banks and their affiliates are now prohibited from engaging in “proprietary trading”. As I, and others, have written about extensively, there is no clear meaning to the term and therefore dealers have a strong incentive to cut back on some of their market making that might be misinterpreted as proprietary trading. In particular, dealer inventories that rise too much or too quickly, may be viewed as constituting the taking of a position, rather than being a valid response to changes in customer demand or the anticipation of such changes. The natural response is to hold lower inventory levels. It is too early in the implementation process to judge the degree of this impact.

There are a number of factors besides a reversion to normal after the boom conditions prior to the crisis and the important regulatory changes just described. These include:

**Strong bond issuance.** The total volume of bonds outstanding has risen as governments have had to issue to cover rising deficits and corporates have taken advantage of very low interest rates, as well as being pushed away from bank loans by changes in that sector. There was also a movement by many companies to reduce reliance on commercial paper and to
lock in the longer maturity of bonds. The absolute growth in the size of bond markets magnifies the impact of any declines in liquidity provision by dealers.

**Tighter risk management by dealers and other liquidity providers.** Not all of the pullback by dealers is the result of regulation. Some of it is a purely market-driven response to the lessons of the financial crisis and other changes that have occurred in recent years.

**Bifurcation of markets.** The Bank for International Settlements and other analysts have noted an increasing differential between liquidity levels in government bond and other liquid markets for highly creditworthy bonds and all other fixed income markets. This helps explain one reason for the arguments about whether liquidity levels have changed – it depends to a considerable extent on which markets are considered.

**Restructuring of liquidity provision within markets.** As discussed below, there are a number of ways that market players have been responding to the changes, and potential changes, in liquidity. The cumulative impact of these on liquidity levels is substantial and growing.

**Will market liquidity decline further?**

There is a realistic and serious concern that market liquidity levels will fall further, for several reasons, but there are countervailing factors that will partially offset these effects. Estimating the net result is quite difficult at this point, although it seems likely that liquidity will in fact decline.

The regulatory factors inducing the major dealers to withdraw liquidity support and to price it higher are almost certain to have greater impacts over the next few years than they have thus far. Some of the rules have not yet been written in final form and some of the measures are being phased in over a number of years, meaning in each case that the full effects have not been felt yet. Liquidity levels in particular can be altered relatively quickly and therefore there has been little incentive for dealers to fully implement rules in advance of their taking full effect. Management teams have also been heavily pre-occupied with shorter-term regulatory implementation, leading them to defer some of their decisions on measures that are medium-term in nature. Adding to this delay, dealers, and the consultants and academics to whom they look for assistance, have not yet figured out how they ought to balance all of the new constraints in theory, much less in practice. They are reluctant to make major changes to their business models until they have a better understanding of how they ought to make those decisions.

There is also a competitive dynamic that is slowing reactions further. It is fairly clear to much of the dealer community that there will ultimately need to be significantly greater repricing and rationing of liquidity provision by the major dealers than has taken place so far. However, any dealer that attempts to jump all the way to the ultimate terms of trade will anger a customer base that is not yet ready to accept this need. Since some competitors will surely attempt to gain market
share by moving more slowly, there is a risk of permanent loss of many customer relationships if a dealer is bold enough to fully implement the necessary changes. Instead, industry leaders have been, and will continue, to take this one step at a time. They will make a partial, but still significant, change in the terms and then watch to see how customers and competitors respond. In addition to the question of whether competitors will move in the same way, it is also likely that some of them will drop out of certain markets over time. The overall effect is to spread the changes over several years and we are only partway through this period.

There is also a high probability that more normal monetary policy will return, which means that central banks will pull back on the extraordinary levels of liquidity that they have provided to banks and markets and that interest rates will rise. The very loose monetary conditions of the last few years have likely temporarily inflated market liquidity. There has been evidence in the academic literature for some time that loose monetary policy in general increases market liquidity in both the stock and bond markets. (See FernandezAmador et. al. (2013) and Chordia et. al. (2003), for example.) Very recently, researchers at the Federal Reserve Bank of San Francisco showed that Quantitative Easing has a very direct effect of reducing liquidity risk premiums in markets where central banks are buying bonds. (Christensen et. al. (2015).) They argue that this is due to the central bank taking away the serious downside risks of price volatility by being a large committed buyer that is averse to allowing significant price declines in these bonds, but is happy with gains, and has the firepower to affect those price movements.

When monetary policy tightens, therefore, market liquidity should be expected to fall. Further, there is a risk that the adjustment to higher interest rates, after such a long period of low rates, could be bumpy, increasing volatility in its own right. This is partly because the long period of steady and low rates may have lured some participants into taking excessive risk in a “search for yield”, which may backfire on them as rates finally rise. In addition, the simple fact of moving to a less predictable monetary policy would increase risks and therefore volatility.

**What factors might offset tightening liquidity?**

There are a number of factors that could work to increase market liquidity levels and partially offset the expected declines.

**Expansion of smaller dealers.** Most of the regulatory constraints apply only to the larger dealers and those that are part of banking groups. This provides a substantial competitive advantage for the mid-sized dealers and for potential new entrants. They appear to have gained market share already as a result and will likely gain more. However, they have a number of disadvantages versus their still-dominant competitors, such as weaker credit ratings and consequent higher funding costs, along with the inability to provide a wide range of integrated services such as many customers demand. This likely limits their potential market share gains.
Increased activity by hedge funds and similar managers of pools of money. In addition to smaller dealers, hedge funds and similar managers of pools of money\(^2\) will step in to provide liquidity and even something close to market making, without formally taking on the obligations to stand ready to make markets. There is no question that as dealers reduce their liquidity provision and charge more for it, some hedge funds will fill in part of the gap. There is a concern, however, that these firms will step out of markets when serious bouts of instability occur. Dealers do this to some extent too, of course, but they have profitable and long-established customer relationships that militate against a total pullout.

Growth of electronic markets. The role of market makers acting as principals is not the only way to provide liquidity to financial markets. There will be improvements, usually through “electronification” of markets, to make it easier for buyers and sellers to match up without requiring a principal to stand in between them. (Some of this has already occurred.) This will reduce the need for dealer inventories and the capital and liquidity to back them up. However, these markets only work for securities for which there is a fair amount of demand. Many buyers and sellers are willing to pay a significant amount to execute transactions quickly, in part because they worry that prices may move against them. It is also difficult to move large blocks of securities this way, as it is unlikely that there is a party on the other side who happens to be interested in that large a transaction at the same time. Breaking up the deal into a series of smaller trades is likely to start moving market prices and may signal to others that there is a large buyer or seller with more to do.

Adjustments by various market participants. There are various ways that each of the main categories of market participants could alter their behavior in response to scarcer and more expensive liquidity. Issuers could choose to sell securities that are more standardized and perhaps are issued in larger sizes. Such a move would increase liquidity and allow them to borrow at a lower rate, all else equal, but it would also mean issuing at times, in amounts, or with conditions that are not as favorable to them. Their existing level of customization is probably worth considerably more than they would gain from the reduced liquidity premium, so it is likely to be only the largest and most frequent issuers who take this route. For their part, investors are already moving to some extent to take credit positions through standardized credit default swaps rather owning bonds outright.

What should be changed to improve market liquidity?

One of the toughest questions is what policymakers should do if they are concerned about market liquidity. Although it is impossible to prove at this point, it appears to me that the regulatory pendulum has swung too far in this area and that the social costs of decreased market liquidity outweigh the social gains from greater financial stability produced by some portion of the new regulations. It is easy to see why this would have occurred. First, the natural reaction to a huge financial crisis is a regulatory “flight to safety” where concerns about market efficiency do not receive their full due. Second, bank regulators have a strong incentive to ensure that banks, and affiliated securities dealers, reduce their level of securities

\(^2\) This would include those managers at family offices, sovereign wealth funds, and other entities who operate similarly to hedge funds. Of course, many managers at such entities do not take such an approach.
risks. However, there is no regulatory authority with the responsibility to ensure that the negative effects on market liquidity do not outweigh the gains from making banks as a class safer. The Securities and Exchange Commission is tasked to take market functioning into account in its own regulations, but it does not have the power to determine what the bank regulators do. Ideally, the Financial Stability Oversight Council would coordinate such trade-offs, but in practice, its focus has been to look for financial stability risks, rather than to determine when some regulators may have unintentionally overshot by creating costs to society that fall outside their own direct responsibility.

It was already clear that there needs to be at least some modest recalibration of the different regulatory reforms, including required levels of capital and liquidity, to take account of their combined effects now that we have a clearer idea of what the total picture looks like. The concerns about market liquidity add to this need for an integrated review. It is not yet clear, however, what specific actions should be taken as part of that recalibration. The core of any recalibration will have to be a serious review of the costs and benefits of the details of the regulatory actions. It seems highly likely that the level of conservatism in certain of the new regulations could be trimmed back modestly and selectively to reduce the harm to market liquidity without sacrificing any significant improvement to systemic safety.
When leaving a job, is it ethical to take old files and code for technical models you developed over the years?

Under the Code of Ethics and Standards of Practice, members have significant obligations to their employers. Specifically, under Standard IV(A) Loyalty:

> In matters related to their employment, Members and Candidates must act for the benefit of their employer and not deprive their employer of the advantage of their skills and abilities, divulge confidential information, or otherwise cause harm to their employer.

This Standard can present a number of questions when a member is changing jobs. As noted above, one of the questions can include whether or not technical trading strategies developed at work belong to the employer or the employee.

The Standards of Practice Handbook provides extensive guidance on this question. The bottom line is that the Standard does not prohibit experience or knowledge gained at one employer from being used at another employer. There is also no blanket prohibition against members contacting clients of their previous firm as long as the contact information does not come from the records of the former employer or violate an applicable “non-compete agreement.” But there are a number of limits on what can be taken. The details below are extracted from the Handbook:

When members and candidates are planning to leave their current employer, they must continue to act in the employer’s best interest. They must not engage in any activities that would conflict with this duty until their resignation becomes effective. It is difficult to define specific guidelines for those members and candidates who are planning to compete with their employer as part of a new venture. The circumstances of each situation must be reviewed to distinguish permissible preparations from violations of duty. Activities that might constitute a violation, especially in combination, include the following:

- misappropriation of trade secrets,
- misuse of confidential information,
- solicitation of the employer’s clients prior to cessation of employment,
- self-dealing (appropriating for one’s own property a business opportunity or information belonging to one’s employer), and
- misappropriation of clients or client lists.

A departing employee is generally free to make arrangements or preparations to go into a competitive business before terminating the relationship with his or her employer as long as such preparations do not breach the employee’s duty of loyalty. A member or candidate who is contemplating seeking other employment must not contact existing clients or potential clients prior to leaving his or her employer for purposes of soliciting their business for the new employer. Once notice is provided to the employer of the intent to resign, the member or candidate must follow the employer’s
policies and procedures related to notifying clients of his or her planned departure. In addition, the member or candidate must not take records or files to a new employer without the written permission of the previous employer.

Once an employee has left the firm, the skills and experience that an employee obtained while employed are not “confidential” or “privileged” information. Similarly, simple knowledge of the names and existence of former clients is generally not confidential information unless deemed such by an agreement or by law. Standard IV(A) does not prohibit experience or knowledge gained at one employer from being used at another employer. Firm records or work performed on behalf of the firm that is stored in paper copy or electronically for the member’s or candidate’s convenience while employed, however, should be erased or returned to the employer unless the firm gives permission to keep those records after employment ends.

The standard does not prohibit former employees from contacting clients of their previous firm as long as the contact information does not come from the records of the former employer or violate an applicable “non-compete agreement.” Members and candidates are free to use public information after departing to contact former clients without violating Standard IV(A) as long as there is no specific agreement not to do so.

Employers often require employees to sign non-compete agreements that preclude a departing employee from engaging in certain conduct. Members and candidates should take care to review the terms of any such agreement when leaving their employer to determine what, if any, conduct those agreements may prohibit.

In some markets, there are agreements between employers within an industry that outline information that departing employees are permitted to take upon resignation, such as the “Protocol for Broker Recruiting” in the United States. These agreements ease individuals’ transition between firms that have agreed to follow the outlined procedures. Members and candidates who move between firms that sign such agreements may rely on the protections provided as long as they faithfully adhere to all the procedures outlined.

For example, under the agreement between many US brokers, individuals are allowed to take some general client contact information when departing. To be protected, a copy of the information the individual is taking must be provided to the local management team for review. Additionally, the specific client information may only be used by the departing employee and not others employed by the new firm.

The Code and Standards are not designed to limit any individual’s career opportunities. They are simply intended to protect everyone’s interests. The Standard in this case explains ethical obligations that are easily met during career transitions.
Editor’s note: while the Chart of the Month usually highlights a market of interest, this month’s chart highlights a potential investment management business opportunity that could be of interest to some members.

Frank L. Teixeira, CFA, CMT, is an industry leader in “fusion investing” – integrating technical and fundamental analysis in the portfolio context. As a partner and senior vice president of the firm, he manages over $1 billion dollars in both domestic and foreign securities and leads the technical analysis division. During the MTA Annual Symposium, he shared some of his experiences managing money at Boston-based Wellington Management.

Among the many interesting points he raised was the idea that momentum investing, an approach grounded in technical analysis, offers an opportunity in the investment management business. Two charts summarize the idea.
In the second chart, the dark blue bars show the average annual returns of several investment styles. The values of these bars are found on the left hand scale of the chart. Momentum has the highest average annual return while growth has the lowest average annual return. The light blue bars show the number of mutual funds that implement a particular strategy. The values of these bars are on the right hand scale of the chart.

Notice that the strategy with the highest returns (momentum) is practiced by the smallest number of funds. The strategy with the lowest average annual returns (growth) is followed by the largest number of funds. For technical analysts seeking opportunities in investment management, this chart summarizes an opportunity. Momentum is underrepresented in the management industry yet could be among the most profitable strategies.

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