



THE LAST ONE PERCENT

by Charlie Smith



With the recent publication of Michael Lewis' book "Flash Boys", a bright light has landed on the murky world of High Frequency Trading (HFT). In the weeks since Lewis appeared on "Sixty Minutes" to promote his book and announce that the U.S. stock market is "rigged", numerous charges and countercharges have been lobbed between stock exchanges, investment banks and the HFT community. The New York Attorney General, the FBI and the U.S. Securities and Exchange Commission (SEC) have all launched investigations. With the HFT crowd now scattered to the corners in hopes of avoiding the regulatory broom, we thought we'd offer our two cents on the matter in the form of a Q&A.

What is High Frequency Trading (HFT)?

of the world's fastest computers, faster than humans can imagine. Up until 40 years ago, stock trades required human intervention. The people charged with acting as final intermediaries between buyers and sellers were called specialists. Specialists stood at their posts at the New York or American stock exchanges and facilitated trading. It was also their job to smooth out turbulent markets by taking the other side of a wave of buy or sell

orders. Imagine a business where you were required to buy low and sell high, day after day. How did one become a specialist? Generally, your father, your grandfather (or some other very close relative!) was a specialist. Broadly speaking, automated trading is the mechanism which replaced the specialists at the core of our markets.

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How did automated trading start?

In 1975, coincident with the demise of fixed trading commissions, Congress authorized the SEC to facilitate a new national trading system. U.S. stock exchanges began to experiment with replacing humans with computers for small trades. Trading volumes were rising, and humans were sometimes having trouble keeping up. The DOT system (short for "direct order turnaround") was implemented to increase efficiency by routing orders directly to a specialist's computer, where they could be

executed automatically, rather than through a broker on the trading floor. The DOT system was the beginning of the end for human traders. It marked the first step toward disintermediation of all parties other than the ultimate buyers and sellers—and pointed the way toward fully automated trading. It reduced trading costs immensely, and in coming years it allowed visionaries such as Charles Schwab to slash commissions for the general public. By the early 1990s, for example, the cost to trade \$100K worth of shares had fallen by 90%, from \$800 to \$80.

How did it come to dominate markets?

he DOT system was very speedy and efficient, and worked well for smaller orders. Over the years, as computers and communication became cheaper and more powerful, and trading volumes grew, it made sense to automate a much greater portion of trading. So much so that by 2005 the protocols for an entirely new national system of automated trading, one which would finally relegate the specialist to the ash heap of history, were being hammered out between existing stock exchanges, clearing firms, investment banks and regulators. Regulation NMS (short for National Market System) was the name given to these protocols. Implemented in 2007, NMS was designed to promote efficient and fair price formation across markets. The ultimate goal was a real-time auction system, with nothing more than a computer and a phone line connecting buyer and seller. As a buyer, I posted a price and the number of shares I wished to transact. As a seller, you did the same. Where our desires matched, a trade happened. What could be more efficient, transparent and elegant, right?

How did NMS work out?

For the average investor, it worked fantastically well. Like the DOT system 30 years earlier, the National Market System drove trading costs into the ground. Retail trades costing \$80 pre-NMS were now tagged at \$8, another 90% reduction. Institutional investors paid less than a penny per share. Technology had cut the cost of trading for retail investors by 99% (from \$800 to \$8) in a generation! Trading volumes rocketed upward. Part of the increase was basic economics—trading was cheaper so people demanded more of it. But another factor was a bit more sinister. It turns out that quirks in the system gave a group of software jockeys the ability to make gobs of money by skimming tiny amounts from each of millions and millions of trades. These were the High Frequency Traders—the Flash Boys—of Michael Lewis' book.

So the HFT crowd DOES have an unfair advantage!

Our comments on this score are mixed. We encourage you to read both Lewis' book and the responses from various quarters of the HFT community in order to make up your own mind on the issue. In our view, yes, the stock market is rigged, but only to the extent that it represents a failure to capture the last 1% of cost reductions for investors.

The last 1% is encapsulated in a set of predatory behaviors in the automated stock market. They include various forms of quote-stuffing, which involves promulgating phantom quotes to smoke out other trader's intentions, with no real intention of transacting. They include using this newly gleaned information to electronically "front-run" other's trades. They include practices known as rebate-and slow-market arbitrage. Some are the result of fairly obvious flaws in the system, and the most egregious will be undoubtedly be fixed over time. Regulators, exchanges, investors and traders built the system, and they can rebuild it to make it better.

Other problems in the system are more structural in nature. How, for example, are the servers at the center of the various exchanges any less "advantaged" than the human specialists of the past? HFTs have shown that access to and control of the data within these computers, like being born to a specialist, is a license to print money. Who will own these computers? The government? A non-profit? Somebody (or something) has to "be the market". Who gets the data first? Time is money!

But don't miss the forest for the trees. Don't let these (comparatively minor) failures eclipse the quantum advances in market structure which have benefitted millions of investors. The system is far better today than 40 years ago. Focus on the benefits; the problems can and will be fixed. Let's thank Mr. Lewis for pointing them out, and get going on the next 40 years.



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QUARTERLY REVIEW

By Denny Baish

Most of the major equity indices ended the quarter in positive territory in what was a volatile first three months of the year. Domestic stocks led the way, with slight gains across all market capitalizations and styles. The S&P 500 Index, a proxy for large-cap domestic stocks, posted a gain of 2%. International developed stocks, represented by the MSCI EAFE, were unable to keep up with the U.S. market, posting a gain of less than 1%. After posting losses in the strong equity rally of 2013, emerging market stocks, represented by the S&P/IFCI Emerging Composite, ended the quarter down 1%.

The Federal Reserve once again topped the headlines in the quarter, as Janet Yellen assumed the Chair from Ben Bernanke. It appears Yellen will continue the policies that Bernanke put in place during his tenure. The Fed continued to reduce its bond purchases (so called Quantitative Easing or QE), and is on pace to finish "tapering" by the fourth quarter of 2014. In a surprise announcement during her first press conference, Yellen noted that interest rate increases could start as early as six months after tapering ends. Economic data released during the quarter was generally mixed, causing some concerns that the economy was slowing. Adding to the volatility this quarter was Russia's invasion of Crimea and the tensions it brought between Russia, Ukraine, Europe, and the United States.

Slight gains were seen across all the major equity categories in the first quarter of the year. Mid-caps led the way, gaining 3%. Large-caps followed closely behind, adding 2%, while small-caps posted a gain of 1%. Value outperformed growth across all market capitalizations. Mid-value gained 4%, and mid-growth added 2%. Large value rose 2% more than its growth counterpart, and small value added 1% more than small growth. International developed stocks lagged the major domestic indices during the quarter, but still posted a small gain. As discussed above, the MSCI EAFE rose less

NDEX	1 st QUARTER RETURN
JIA	-0.15%
S&P 500	+1.81%
&P Mid Cap 400	+3.04%
Russell 2000	+1.12%
ISCI EAFE	+0.66%
BarCap Agg. Bond	+1.84%

than 1% for the quarter. Emerging markets, represented by the S&P/IFCI Emerging Composite, fell 1%.

All major segments of the fixed income market finished the quarter with gains. Long-term bonds bounced back after a double-digit loss last year. Long-term U.S. Treasuries, represented by the Barclays Capital Long Government Index, rose 7%. Barclays Capital Long Municipal Index, a proxy for the long-term municipal bond market, also finished the quarter with strong gains, surging 6%. Citigroup World Government Bond Index, a proxy for International bonds, reversed losses from the fourth quarter and gained more than 3%. High yield bonds also gained 3%. Intermediate-term corporate, municipal, and government bonds all had gains of 3%, 2%, and 1%, respectively. The Barclays Capital Aggregate Bond Index, a proxy for the overall investment grade U.S. fixed income market, gained almost 2% for the quarter.



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BONDS - THE REAL MARCH MADNESS WINNER

by Jay Sommariva



With all due respect to the men's and women's basketball teams at the University of Connecticut, the real March Madness winners were fixed income investors. In the first quarter of 2014, taxable and taxfree bonds provided total returns of 2.87% and 3.85% respectively (source: Bloomberg). Similar to a good basketball game, there was lots of back and forth during the quarter, but in the end the quality names prevailed.

he first quarter began where 2013 left off. The U.S. Federal Reserve continued to "taper" Quantitative Easing (QE), and Treasury yields finally stabilized after seven months of steady increases. The consensus forecast early in the year was that the Fed would be done with QE by the end of 2014, and we would see a rise in the Fed funds rate by late 2015. There was no doubt in anyone's mind that interest rates were headed

up. The only question: How high? However, as is the case with nearly all market-moving events, a series of unforeseen political and economic upsets blew up everyone's bracket.

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The turmoil in the Ukraine, less-than-stellar growth in China, and hardship in the emerging markets all conspired to boost bond prices during the quarter. As these uncertainties mounted, they forced a flight from risk, which drove up the prices of both U.S. Treasuries and domestic investment-grade bonds. New Fed Chair Janet Yellen attempted to dampen some of the bond market enthusiasm with her infamous "six months" comment, referring to the time interval between the end of tapering and the beginning of formal interest rate increases. Markets quickly shrugged it off as a

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mere technical foul on her part, and the "risk-off" trade continued. Ongoing weakness in the U.S. economy and higher than normal domestic unemployment made even more investors question the growth consensus. By the end of the quarter, very few economists believed that the Fed would raise rates anytime soon. The consensus had come full circle. Raising interest rates "six months" after the completion of QE does not even seem to be an option at this point.

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Another driver of the recent rally in fixed income is the unwillingness of investors to part with their bonds. According to MarketAxess, an electronic bond trading platform, traders trying to purchase bonds are only successful 46% of the time, while investors trying to

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sell their securities succeed at a rate of 85%. This tells you the bond market remains very much a seller's market, with bidders forced to pay that little bit extra just to get a transaction done. This mismatch has sent risk premiums, which represent the extra amount of interest you get paid to take credit risk, down to the lowest levels since 2007, prior to the credit crisis. Whether it's geopolitical issues, lack of supply, or both, the result has been higher bond prices so far in 2014. Both investment grade corporate bonds and municipals have already recouped their 2013 losses and then some.



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The DJIA is a price-weighted average of 30 actively traded U.S. blue chip stocks chosen by the editors of the Wall Street Journal. The Barclays Capital Aggregate Bond Index is used to represent the performance of U.S. investment grade bonds. The S&P 500 is a widely recognized index of 500 stocks and is representative of the equity market in general. The S&P Midcap 400 represents the mid cap sector of the U.S. equities market. The Russell 2000 Index is designed to represent the performance of small cap U.S. stocks. The MSCI EAFE Index represents the international equity markets and includes 21 major MSCI indexes from Europe Australia and Southeast Asia. You cannot invest directly in an index. These indices are unmanaged and may represent a more diversified list of securities than those recommended by Fort Pitt. In addition, Fort Pitt may invest in securities outside of those represented in the indices. Additional information on any index is available upon request.

