GLENMEDE
INVESTMENT AND WEALTH MANAGEMENT

Monthly
INSIGHTS

Jason D. Pride, CFA Director of Investment Strategy September 2010

The Flash Crash: Are the Markets Rigged?

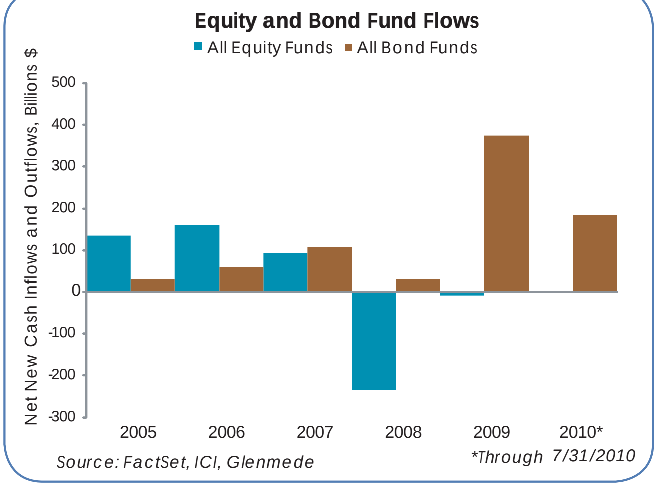
“If life was fair, Elvis would be alive and all the impersonators would be dead.”
— Johnny Carson

Summary

- The May 6, 2010, “flash crash” was likely the collective result of two reinforcing factors: plunging trading volumes and disparate stock exchange practices.
- Growing evidence suggests the aggressive tactics employed by high-frequency trading firms also contributed to the erratic trading that ensued that day.
- Damages from the “flash crash” were limited primarily to those transactions executed during the disruption, although many of these trades were later reversed.
- Regulators are in the process of enacting, and continue to consider, procedural and operational measures to protect against similar future drops.
- The financial markets occasionally deal with disruptions and inappropriate practices; investors should regularly employ a healthy dose of precaution, diligence and discipline.

Concerns about the Fairness of the Financial Markets

The fairness of the financial markets is once again in question, and several news articles have opined whether investors will retreat from equities as a result of the May “flash crash.” Admittedly, empirical evidence shows retail sentiment has shifted: according to the Investment Company Institute (ICI), equity mutual funds have seen $1.7 billion of outflows in 2010 while bond funds have appreciated $185.6 billion.



Source: FactSet, ICI, Glenmede

*Through 7/31/2010

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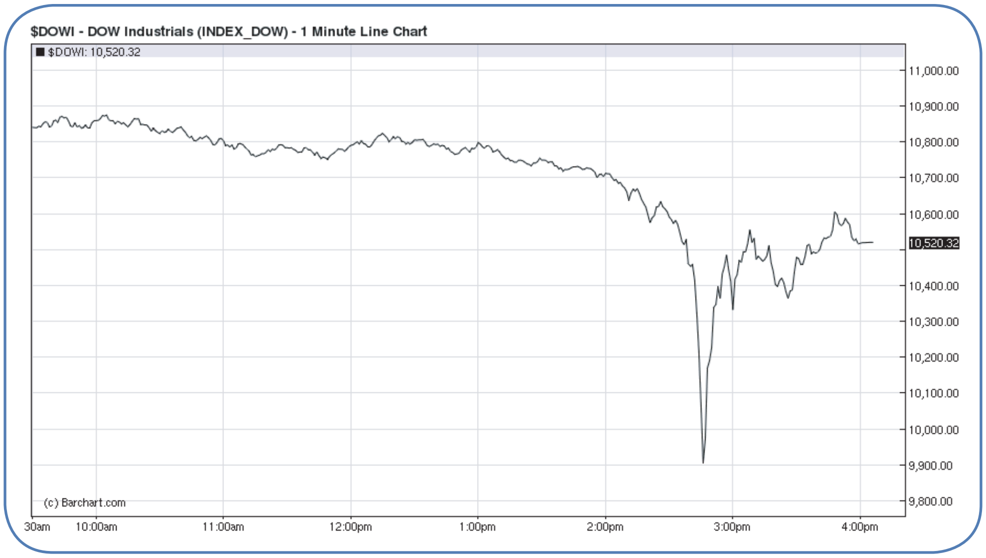
The ‘Flash Crash’ – What Happened

On Thursday, May 6, the U.S. stock market experienced both an unusually quick drop and a near full reversal — an occurrence now being studied by authorities and market experts.

The stock market was in negative territory much of the morning and afternoon due to Greece’s financial situation, protests in Athens and the elections taking place in the U.K. The Dow Jones Industrial Average (DJIA) was down 161 points (1.5%) by 2:00 p.m. (EST), which was not unusual given the global news. The decline then accelerated, and by 2:42 p.m. 424 points (3.9%) had been lost. Within the next five minutes, the index dropped another 573 points (5.5%), bringing the cumulative loss to 997 points (9.2%). Within 90 seconds of hitting this low, the market recovered 543 points and closed down only 348 points (3.2%) at 10,520.

Many individual securities experienced even larger intra-day swings. Procter & Gamble (PG) swooned by as much as 37% and Accenture (ACN) traded for $0.01 at one point, despite having opened and closed at over $40/share. Similarly, over 25% of all ETFs experienced more than 50% intra-day price swings.

Although their actions were not immediate, the different exchanges eventually established a common standard for canceling “clearly erroneous” trades. Specifically, any trade executed between 2:40 and 3:00 p.m. that was priced at 60% away from the previous trade, at or before 2:40 p.m., was cancelled. In total, transactions in 286 different equity securities were cancelled in this manner.



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Causes of the Decline

The Securities and Exchange Commission (SEC), Commodity Futures Trading Commission (CFTC), the Financial Industry Regulatory Authority (FINRA) and other federal agencies investigating and analyzing the day's events have not found evidence of either a "fat finger" error for a multiple-billion share order or exceptionally large orders in Procter & Gamble or any other stock preceding the crash. Further, there were no traces of computer hacking or terrorist activity.

Rather, the SEC believes the extraordinary trading was the result of a confluence of events whose cumulative effect exacerbated what was already a losing day. Of these numerous factors, two interlocking influences appear to have been at the heart of the downward spiral. First, U.S. financial markets have come to depend heavily for liquidity provision on high-frequency traders. This marks a significant change from the long-standing 'specialist' system in which a dedicated professional oversaw the orderly trading of each security, ensuring the pairing of buyers and sellers. In instances where there was an absence of either a buyer or seller, the specialist was obligated to fulfill the missing side of the order, thus guaranteeing liquidity.

Today, most trading occurs via electronic transactions between computers using high-speed mathematical trading rules (algorithms). There is no obligation for these participants to intercede as a stabilizing force when markets become volatile. In fact, algorithms do not work as well in times of market stress, and during choppy conditions, many of these liquidity providers actually pull away from the market. When these traders cease to participate, as many did on May 6, trading volumes plunge.

The second factor contributing to the sudden drop is that U.S. financial markets have become quite fragmented with the advent of numerous electronic exchanges with varying governance practices. The disparity in rule-sets and transaction speeds was unfortunately evident on May 6, leading to larger-than-average discrepancies in different exchanges' pricing information. As expected, high-frequency trading firms reacted by slowing or even halting their trading activity, which caused greater pricing disparity and reinforced the downward spiral.

Potential Inappropriate Behavior

In its review of questionable trading practices, the SEC is examining "quote stuffing" — the act of placing and cancelling a large number of buy or sell orders within a fraction of a second. Some suspect that high-frequency firms manipulate the markets by creating a wave of orders that temporarily slow electronic exchange networks, enabling them to profit from the resulting pricing disparities.

Data compiled by *The Wall Street Journal* and T3 Capital Management shows that on February 18 of this year, only 1% of the $90 billion buy or sell orders originally posted was actually traded. While it is possible that many, if not all, of the cancelled trades were legitimate, a 1% execution rate is notably low. Still, high-frequency trading firms are not so delusional as to believe they are capable of manipulating a nearly 10% drop in a single

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afternoon, nor would they believe they could do so without reproach.

Unfortunately, it will be quite difficult to determine the truth without more sophisticated monitoring methods, and it will take the regulators time to sort through the reams of information.

Are Markets Rigged?

As Johnny Carson, my all-time favorite TV host, once said, "If life was fair, Elvis would be alive and all the impersonators would be dead." Without becoming too philosophical, this quip reminds us that there always exists the potential for a lack of fairness. Sometimes "unjust" occurrences are caught and result in settlement, and sometimes unfair things happen without recourse.

I had originally intended to use the following quotation, which is not nearly as entertaining as Carson's but is more directly connected to investing and recent events:

> For at least another hundred years we must pretend to ourselves and to everyone that fair is foul and foul is fair; for foul is useful and fair is not. Avarice and... precaution must be our gods for a little longer still.
>
> — John Maynard Keynes

The essence of Keynes' directive is this: as investors, we must recognize the imperfections of the financial markets. Greed is a strong force, and financial markets provide ample incentive to entice some participants to bend the rules using varying types and degrees of inappropriate activity. There is always the potential for information to flow unevenly among participants, giving those with access an unfair advantage. While trading on insider information is clearly prohibited (think of Martha Stewart's time in the brig), it is not always caught or easily proven.

The history of the U.S. financial markets is replete with instances of improper and sometimes illegal conduct, and severe market declines, while rare, are not a new occurrence either. On October 19, 1987, the U.S. equity market, which was dominated by a single manual trading venue as opposed to today's high-speed fragmented markets, posted a much larger one-day decline (22.6%). In the past 100 years, there have been 17 other single-day declines of 7% or more, twice the loss experienced on May 6. Despite the occasional intrusion by morally compromised participants, or the occasional market crash, the equity markets have delivered a relatively solid 9% return average over the last 100 years.

Learning from the 'Flash Crash': Lessons for Regulators

Regulators are pursuing a number of initiatives that will improve the integrity and fairness of the U.S. financial markets, perhaps fostering investor confidence.

Given that today's pre-coded trading algorithms do not have the capability, flexibility

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or creativity to assess and respond to highly unusual events, the SEC has proposed and temporarily implemented revised market-wide circuit-breaker provisions to include more “time out” mechanisms. The newly implemented stock-by-stock circuit breakers require trading venues to halt trading for five minutes if a stock’s price moves by more than 10%. Meanwhile, Nasdaq officials, in the interest of limiting cancelled trades, continue to debate whether to charge customers for “excessive cancellations," though it will be difficult to determine where such a line should be drawn.

The SEC is considering regulations to limit “destabilizing” short-term trading activities by large proprietary firms. In the past, as referenced earlier, professional liquidity providers with the fastest market access and data feeds were responsible for facilitating market liquidity through a process of affirmative and negative obligations — essentially requiring them to continuously provide and honor quotes at which they would buy and sell a given security. In contrast, today’s high-frequency traders are not subject to such obligations. It will be important for the SEC to address the issue of certain market participants having preferred access to order information but not having the obligation to provide liquidity in all market situations.

A series of risk management initiatives is being considered in the overall effort to improve market stability. It has been proposed that broker-dealers either limit a client’s direct exchange access or impose more effective pre-trade controls. In addition, in an attempt to improve the SEC’s ability to monitor, analyze and respond to market actions, it has been suggested the agency create a reporting system that records the trading activity of large, daily market participants and that the exchanges create a consolidated order-tracking system. In the case of future market disruptions, the SEC recommends all exchanges employ fair and consistent processes and policies when correcting erroneous trades.

Learning from the ‘Flash Crash’: Lessons for Investors

While the SEC and other regulators work to ensure the markets avoid another “flash crash,” investors too must ensure their portfolios are well protected. A finite way to accomplish this would be to exit the equity markets completely, but with yields on alternative investments near all-time lows and equity valuations at relatively reasonable levels, this is an unattractive option for most investors. Instead, we recommend maintaining an allocation to equity and other risk assets while exercising vigilance. To this end, we outline steps that should minimize exposure to future market disruptions:

- Avoid using stop-loss orders when possible: Stop-loss orders instantly become market orders when a stock’s price crosses a pre-designated threshold and have the potential to transact at very unfavorable prices. For instance, stop-loss orders were responsible for the $0.01 execution prices on some stocks during the “flash crash.”

- Avoid the temptation to react to a precipitous market decline: Initiating new sell orders can similarly result in unfavorable pricing.

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- Act with caution when buying or selling thinly traded securities: Small-cap stocks and some ETFs may be difficult to trade in extreme market circumstances.

- Maintain adequate cash or short-term investments: This will protect you from having to inopportunely sell higher-risk investments.

- Employ a value-oriented investment approach: This should provide some protection from steep losses while helping to justify a longer-term holding period in a declining market.

Investment Strategy & Recommendations

We continue to recommend allocating to a diversified basket of risk assets and underweighting low-yielding alternatives such as cash and treasuries. The global economic recovery is slowing, but investors are justified to take some risk due to reasonable equity valuations. We do not believe the economy and markets will suddenly regain the rapid momentum of early 2009, but will instead work through the many economic issues in a more sideways and volatile pattern.

Within investors' diversified allocation to risk assets, portfolio allocations should continue to be shifted to undervalued assets such as U.S. quality growth stocks and European multinationals. While we are willing to make an allocation to Europe, we still recommend a defensive posture that recognizes the global debt problem is most pronounced there, likely leading to continued pressure on the euro.

We recommend benefiting from growth in emerging Asia directly through funds and strategies investing in the region, as well as indirectly through investments to multinational companies that export there. We currently recommend, for income generation, an allocation to high-quality, high-yield corporate debt and international sovereign debt.

Lastly, investors should position themselves to protect against and benefit from above-average market volatility by allocating to alternative (hedge funds) and option-based strategies.