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Lessons from the Flash Crash May 2010

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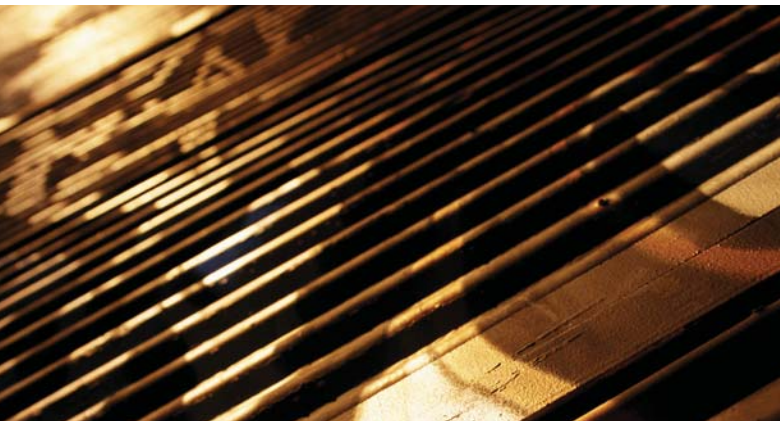

Investors, regulators, stock exchanges and other market players are all trying to pinpoint what caused the Dow Jones Industrial Average to fall by nearly 1,000 points in the minutes between 2:40 and 3:00 p.m. eastern time (ET) on Thursday, May 6, 2010. Investors are scared, and rightly so. Many have written about the crash and offered theories as to what caused it. While several events likely conspired, and it will take time to sort everything out, we can already draw important lessons from what happened. Let us begin by going over some of the key events of May 6th.

A Recap of the Day…

Early in the day, markets were under a cloud of fear that a potential default by Greece could have a devastating impact on the European banking system. These banks are already thinly capitalized and slow to lend. A disorderly default by Greece could result in a major slowing of credit creation and an environment similar to the post-Lehman U.S. markets.

The market was also unsettled by further bad news about Goldman Sachs, and by concerns that the financial regulation bill (currently making its way through the Senate) could end up slowing credit creation and hampering the U.S. economic recovery.

As the morning wore on, fears regarding European sovereign debt and the banking system drove investors to reduce risk levels in portfolios, leading to an abrupt unwinding of the USD/JPY and EUR/JPY carry trades. Investors started selling assets denominated in dollars and euros to pay back their yen borrowings, resulting in a sharp drop in both the euro and the dollar and a surge in the yen. This occurred around 1:00 p.m. ET.

> Lesson 1: Liquidity is only helpful when it exists in the context of rational markets.

The extreme volatility in currency markets spilled over into equity markets and probably accounted for the initial 2-3% drop in equity markets through the early afternoon. While that drop is significant, it was not likely the cause for the widespread panic that gripped the markets for roughly 10 minutes starting just before 2:40 p.m. ET.

So What Happened?

We believe fears concerning European sovereign debt created an environment of heightened risk aversion, which allowed a series of triggers to create a tidal wave of stop-loss selling that rippled across the indices and spiraled out of control in what was essentially a replay of Black Monday in October 1987[1]. Potential triggers include:

[1] Black Monday refers to Monday, October 19, 1987, when the Dow Jones Industrial Average (DJIA) declined nearly 22% in a single day, making Black Monday one of the most infamous days in recent financial history. By the end of the month, most of the major exchanges had dropped more than 20%.

- A so-called "fat finger" trade. A large trading error was the first culprit pointed to in the aftermath of the crash, but as we uncover more information about what happened, this is looking less and less likely to have been the cause.

- Bearish trades in the options market. A bearish trade by Universa Investments in the options market (the "Black Swan Trade") set off further "hedging" sales by counterparties. A large futures trade by Waddell & Reed has also been offered up in this context as a possible "trigger" trade.

- Automated trading by high-frequency traders, including hedge funds, proprietary trading funds and self-described market makers. These electronic trading platforms currently constitute a high proportion of trading in the stock market. As the selling orders spread and stock-trading volume soared, some of these electronic trading firms pulled to the sidelines. This put further selling pressure on the trading venues remaining open, causing further chaos.

None of these events on their own would have likely caused the market to collapse. Trying to pinpoint exactly which one was the culprit does not address the real issue: the structural instability in the U.S. equity market.

The United States has more than 50 market centers, making it a highly competitive market. However, not all market participants play by the same rules. The high volume of market stop-loss selling and resultant free-fall in the market caused circuit breakers on the New York Stock Exchange (NYSE) to kick-in as planned; they were designed for exactly this purpose in response to the events of October 1987. However, in today's market environment — where the NYSE accounts for less than 30% of the volume of the stocks it lists — the impact of the NYSE circuit breakers was simply to push sell orders onto the NASDAQ and other electronic trading sites, none of which had circuit breakers in place.

The lack of circuit breakers across all exchanges was intentional to maximize liquidity, but on May 6th, as the market spiraled out of control, the weakness of that approach became evident. Rather than taking the slowdown in activity at the NYSE as an indication that something was amiss — something that might have occurred had there been human intervention — the NASDAQ and other exchanges triggered their "self-help" mechanism against the NYSE. Thus, they bypassed the NYSE and in so doing prevented proper price discovery in the market. This is what caused blue chip stocks like Procter & Gamble and Accenture to trade for absurdly low prices at the height of the mayhem. Exchange Traded Funds (ETFs) took the brunt of the irrational trades executed that day, accounting for two-thirds of the stocks impacted. It appears that many investors had in place market stop-loss orders in ETFs.

> Lesson 2: Investors who place market stop-loss orders are not only taking big risks with their own assets, they are being irresponsible in their potential systemic impact on the markets.

High-frequency traders, which approximate structured front-running schemes, exacerbated the problem. Many of these firms, which engage in trading based on complex computer algorithms, have servers that link into the main stock exchanges, giving them a huge competitive advantage over all other market players. They have essentially taken on the role that stock exchange specialists used to take (and still do perform on the NYSE). Many of them get the same benefits as specialists, like stepping in front of other orders and getting paid for the liquidity they provide, but, unlike specialists, are not obligated to provide liquidity when markets go awry. This is what happened on May 6th — many of these high-frequency traders used their perks to the disadvantage of other market players as the market was tanking and withdrew from the market when the liquidity they provided was needed most.

What Happened Next…

On May 7th, NASDAQ and other electronic exchanges agreed to cancel trades on 287 stocks that were executed at 60% or more above or below the last price around 2:40 p.m. ET. This action was completely arbitrary and unpredictable, and caused widespread confusion in the markets. While this may have come as a relief to some,

including those who would have realized huge losses, those who failed to make handsome profits because their trades were cancelled for falling outside the 60% limit are rightfully outraged. It is strange to give some traders — and only some traders — a "mulligan." Who are NASDAQ and the other electronic exchanges trying to protect? It brings up a huge issue of fairness, and the legitimacy of cancelling those trades will almost certainly be tested.

Certainly, May 6th was an embarrassing day for NASDAQ and other electronic exchanges. It is clear that the controls they had in place — if they had any at all — were not the ones needed. NASDAQ and the other electronic trading centers must have known the trades that were being made were bad. The events of the day also exposed the fact that many firms lack very basic discipline around pre-trade controls; the discipline to ensure that faulty algorithms do not send out irrational or erroneous trades.

The Lessons…

There are several lessons to be learned from May 6th. First, it is strikingly clear that liquidity for its own sake is not good. Liquidity is only helpful for investors when it exists in the context of rational markets. The excessive liquidity provided by electronic exchanges and high-frequency traders encourages short-term speculation, which leads to bubbles and is detrimental to the health of markets by discouraging long-term investing.

Stock markets exist to serve as a source of capital for business, to facilitate savings and investment and to allow efficient price discovery for allocation of capital. Their purpose is not to facilitate short-term trading; they should not be casinos. Markets that operate on complex algorithms, with no checks and balances and little to no human judgment to verify the rationality of prices, are deeply flawed.

Second, investors who place market stop-loss orders are not only taking big risks with their own assets, they are being irresponsible in their potential systemic impact on the markets. All market participants need to develop controls, both built into their computer systems and their human oversight, which ensure that they send to the market only trades they really mean to make. They should not rely on NASDAQ again to forgive their bad trades.

Third, market participants also do not seem to understand the implications ETFs have on the market. ETFs account for a huge share of the trading volume in the markets today. People think ETFs are highly liquid, but that liquidity proved elusive on May 6th when many of these instruments became completely illiquid. That approximately two-thirds of the cancelled trades in ETFs, it is evident that many investors have not yet worked out how to use these instruments.

> Lesson 3: Market participants do not seem to understand the implications ETFs have on the market.

Fourth, it has become clear that many market participants do not really understand the profound changes the market has undergone in recent years. Electronic exchanges and high-frequency traders have dramatically altered how the market works. Not even the regulators understand the markets anymore; they have not kept pace with the changes. U.S. equity markets, which were at one time orderly, efficient markets, have become a Wild West with no sheriff. This free-wheeling, unregulated system allows market structure arbitrage, where high volume market participants can operate to the disadvantage of smaller participants and, indeed, all long-term investors.

In this context, we give top marks to Mary Schapiro and the U.S. Securities and Exchange Commission (SEC) for summoning the exchanges and requiring that they discuss ways to guard against a repeat of May 6th. We applaud her push to require uniform automatic circuit breakers that will halt trading in individual stocks instantly when things go haywire. We commend the SEC for considering a requirement to tag large traders, more uniform erroneous trade guidelines, greater consistency across exchanges with regard to the "self-help" mechanism, and an order trail audit system. We were also pleased to see the partial reinstatement of the uptick rule. The illegality of naked short selling should be enforced. Establishment of the Volcker Rule, restrictions to sponsored access and better firewalls for market makers, including dark pools, would all help as well.

Lessons from the Flash Crash May 2010

We believe the U.S. equity market offers a wealth of promising opportunities, but it remains structurally unstable and needs to be reformed. It is essential that markets be organized in a way that encourages all investors to trust they will be treated fairly. Any appearance that the markets treat insiders (like high-frequency traders) better than the public at large will harm that trust and seriously discourage participation in markets. Financial regulation must ensure that we have a stock market that is transparent and fair, where small investors can trust their savings. This is essential to the long-term stability of the stock market and the health of the overall economy.

We are proud of our role in helping to defend and maximize investments which represent the savings of millions of working people. We have the experience and confidence to navigate what can sometimes be treacherous waters on behalf of our clients. But we would be much happier if reform of the equity market, as discussed here, gave all investors confidence in a fair and transparent U.S. equity market.

Lesson 4: Many market participants do not really understand the profound changes the market has undergone in recent years.

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