



U.S. COMMODITY FUTURES TRADING COMMISSION
ENSURING THE INTEGRITY OF THE FUTURES & OPTIONS MARKETS

Commodity Futures Trading Commission

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Testimony (Embargoed)

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Statement Of Gary Gensler, Chairman, Commodity Futures Trading Commission, before the Senate Committee on Banking, Housing, and Urban Affairs, Subcommittee on Securities, Insurance, and Investment

May 20, 2010

Good morning Chairman Reed, Ranking Member Bunning and members of the Subcommittee. I thank you for inviting me to today's hearing on the unusual volatility in the capital markets on May 6, 2010. I am pleased to testify alongside Securities and Exchange Commission (SEC) Chairman Mary Schapiro.

Staff of the Commodity Futures Trading Commission (CFTC) and SEC released a joint report on Tuesday that presented their preliminary findings regarding May 6's market events. I wish to thank the staffs of both agencies and compliment their dedication for working tirelessly and cooperatively to issue this detailed report in such short order. I will touch on some of those findings in my testimony today. The two agencies also announced last week the creation of a Joint CFTC-SEC Advisory Committee on Emerging Regulatory Issues that will take as its first project reviewing and analyzing the market events of May 6.

Those market events had significant implications for the investing public and American businesses. It is essential that we continue our review of the contributing circumstances of the price volatility and provide recommendations to promote the integrity of our markets. More work must be done to accomplish this goal. It is central to our mission that markets are fair, orderly and transparent.

I will focus my testimony this morning primarily on issues related to the futures marketplace and leave Chairman Schapiro to address the securities markets.

The Equity Index Futures Markets

Before I turn to the events of May 6, I will discuss the makeup of the stock index futures markets.

Stock index futures are derivatives contracts that trade on central exchanges. Much like a crude oil futures contract is based upon the price of crude oil, a stock index futures contract is a cash settled derivative based on the value of a stock market index. Futures on many broad based U.S. stock indices, including the S&P 500, the Nasdaq 100 and the Dow Jones Industrial Average, trade on the Chicago Mercantile Exchange (CME). Futures on other U.S. stock indices, including the Russell 2000 Index, trade on the Intercontinental Exchange, Inc. (ICE). The stock index futures marketplace consists almost entirely of futures contracts based on these four principal stock indices. The total outstanding notional value of the futures contracts on these indices is approximately \$360 billion. This compares to a total U.S. equity market value of approximately \$13 trillion.

By far the most active stock index futures contract is the E-Mini S&P 500 ("E-Mini") contract, which is based on the value of the S&P 500 Stock Index. E-Mini futures account for more than 80 percent of the notional value of stock index futures open interest on U.S. exchanges and represented 78 percent of the trading volume of stock index futures (on broad based indices of U.S. stocks) on May 6. E-Mini futures trade on the CME Globex electronic trading system, which operates nearly 24 hours a day from Sunday evening to Friday afternoon.

Algorithmic Trading, Automated Execution and Electronic Market Making

Futures market trading until recent years largely was transacted through open outcry among participants physically standing on the exchange trading floor. Today, 88 percent of futures and options trading on the CME is done electronically. The E-Mini contract is 100 percent electronic. The move from trading on the floor of an exchange to electronic trading introduced significant changes in trading methods. These include algorithmic trading, automated execution and electronic market making.

Algorithmic trading refers to the practice of using computer algorithms to direct order entry into electronic trading platforms. An algorithmic trading strategy establishes in advance the parameters of each trading order, such as the time of submission, the price and the quantity. One of the goals of an algorithmic trading strategy is to meet preset trading targets – average price and the total quantity to buy or sell. Once such a target is established, an algorithmic trading program directs orders into electronic trading platforms. These strategies often are executed without human intervention.

Algorithmic trading is utilized by a variety of market participants, most notably by executing brokers to facilitate customer orders as well as by high frequency traders making markets in individual futures contracts or securities.

Automated execution of large orders often consists of dividing a large trade into many small trades with the goal of achieving the best average price. Automated execution is widely used by large investors such as pension funds or asset managers to acquire or hedge their exposures in different markets: cash, futures or options. This service is provided to investors by executing

firms (those who have access to the exchanges' electronic trading platforms). The investor chooses the appropriate algorithm by making only a few clicks on a drop down menu provided on the executing firm's system. For example, an investor can select the time period over which an order needs to be executed, the largest percentage of total volume that transactions can represent, and the portion of the order that will be visible to others in the market. The client clicks "OK" and the algorithm begins sending bid or offer messages to the trading platform.

Automated trading strategies also are used by traders engaging in market making. Algorithmic market making broadly consists of placing limit orders, either as offers to sell above the current market price or bids to buy below the current market price. The goal of this strategy is to earn the bid-offer spread on lots of transactions. Algorithmic market makers generally do not access the markets in the same way that investors using algorithmic trading do. They do not, for example, use pull down menus or click OK. They tend to design their own algorithms to quickly, often in a manner of microseconds, get their orders into the trading platforms.

Other algorithmic trading strategies include cross-market arbitrage, which looks for price discrepancies across markets, trend following and mean reversion. Execution of these algorithmic strategies may facilitate cross-market linkages when an order executed in one market transmits its price impact to other markets. A further algorithmic high frequency trading strategy is referred to as "sniping" or "sniffing." This strategy submits and quickly cancels orders, looking for hidden pockets of liquidity.

Electronic Futures Trading Market Protections

In this new environment of electronic trading platforms, where sometimes no human interaction occurs, it is essential to have robust market protections. Both CME Globex and the ICE trading systems have automatic safety features – termed "pre-trade risk management functionality" – to protect against errors in the entry of orders (such as "fat finger" errors) and extreme price swings. These features help ensure fair and orderly markets. Based on the rise of algorithmic trading and the events of May 6, we need to review whether further protections are needed in these fast paced computer driven markets and, if so, what those measures are.

First, CME and ICE electronic trading systems both automatically reject orders priced outside ranges of reasonability, also known as price bands. This feature prevents clearly erroneous orders from triggering a sequence of market-moving trades that later may require cancellation.

Second, both CME and ICE have maximum order size limitations that prevent entry into the trading engine of an order that exceeds a predefined maximum quantity.

Third, both CME and ICE have protections with regard to "stop loss" orders. Such orders are triggered, for example, if the market declines to a level pre-selected by the person entering the order.

Fourth, CME Globex has stop logic functionality that protects against cascading stop orders – the domino effect of one stop order triggering others. Globex's stop logic functionality pauses trading for five to ten seconds – five seconds in the case of the E-Mini contract – when the trading engine recognizes that it has a series of resting stop orders that could lead to a cascade and move the market up or down beyond a specified amount. On May 6, the stop logic

functionality occurred on two currency futures contracts and when the E-Mini contract hit bottom.

Preliminary Findings

The staffs of the CFTC and SEC have worked countless hours to issue preliminary findings related to the causes of the market disruption of May 6. Much work, however, remains to examine the events of that day. At this stage, there are a number of key themes that we are reviewing.

Preliminary staff findings suggest that a confluence of economic events, signals from other markets and a marked increase in sell orders (in comparison to buy orders) culminated in a significant dislocation of liquidity in the E-Mini contract. This liquidity dislocation also was preceded by some reduction in activity of certain liquidity providers.

Exchanges and market participants have stated their belief that it is unlikely that a “fat finger” mistake caused the heavy volatility of May 6. To date the CFTC staff review produced no evidence indicating that a “fat finger” was the catalyst.

News in the Marketplace

On May 6, there were two types of news that were hitting the markets. There was general economic news coming into the market that could affect the valuation of securities and derivatives as well as news coming from within the market, such as traders looking to market events in making their trade decisions.

Economic News

May 6 began with turbulent skies in the marketplace. Many financial news outlets were reporting on the uncertainties emanating out of Europe. Premiums were higher on credit default swaps on many European sovereign debt securities, including debt of Greece, Portugal, Spain, Italy and Ireland. The broad U.S. equity market declined as the S&P fell nearly 2 percent from its previous day’s close by 2 PM. The volatility associated with this uncertainty was reflected in the Chicago Board Options Exchange SPX Volatility Index, which was 61.6 percent higher than May 5’s close at the height of the volatility.

Market News

On May 6, market participants would have been able to observe a number of indicators of market uncertainty. Those indicators both were symptoms of uncertainty and, when transmitted to the broader markets, may have contributed to investor concerns.

The market saw a flight to quality, indicating greater market uncertainty:

- The 10-year Treasury yield fell from 3.58 percent on the prior day to an intraday low of 3.26 percent with a concurrent change in price of Treasury futures.
- The price of gold futures rose steadily from approximately \$1,180 to \$1,210 per Troy ounce from the open to 1:30 pm.
- Shortly after 1:00 pm, the Euro began a sharp decline against both the U.S. dollar and the Japanese Yen.

There also were a number of additional market signals that may have been relevant to market participants.

First, from 2:00 pm to 2:30 pm, there was a significant increase in liquidity replenishment points (LRPs) at the New York Stock Exchange (NYSE). LRPs act as “speed bumps” and are intended to dampen volatility in a given stock by temporarily converting from an automated market to a manual auction market when a price movement of sufficient size is reached.

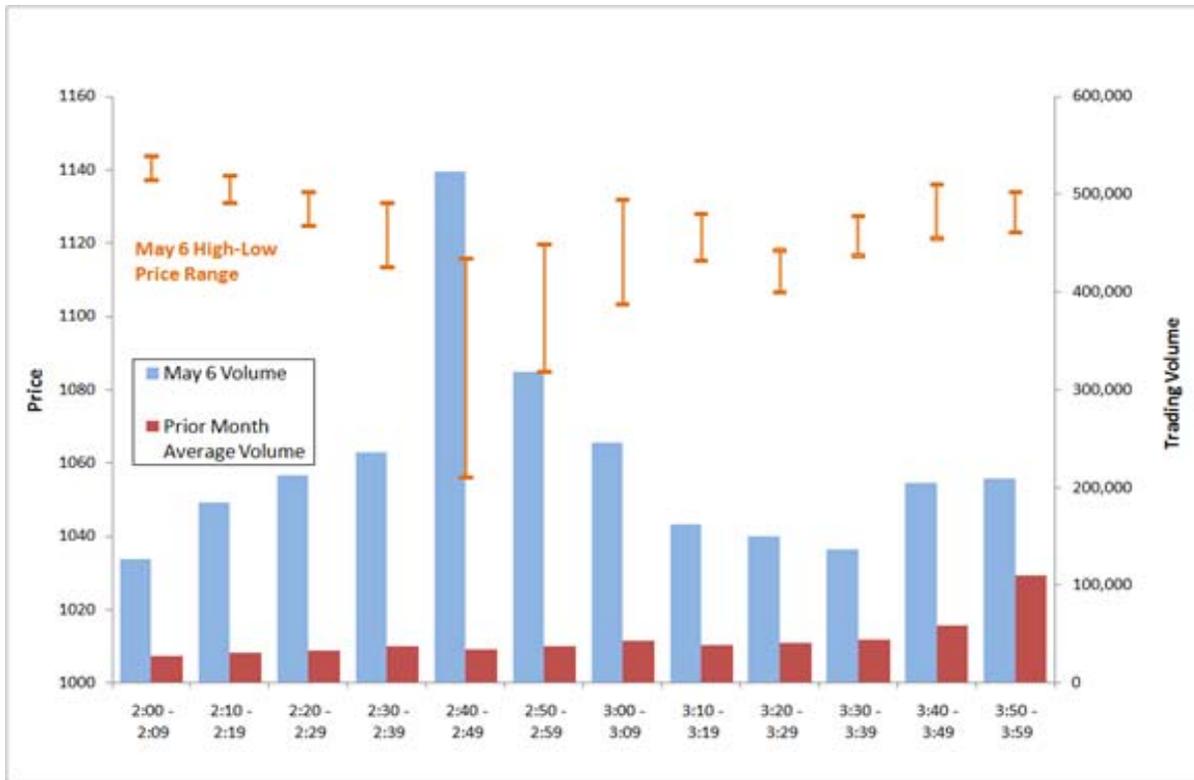
Second, after 2:00 pm, the already existing market decline accelerated and implied volatility sharply increased. A number of equity exchange traded funds were declining more than the broader market. Similarly, at least eight closed-end mutual funds had declined by 50 percent or more by 2:24 pm.

Third, we saw declarations of self-help by a number of exchanges interacting with NYSE/Arca. Self-help permits one trading center to bypass the quotes of another trading center if the affected center repeatedly fails to respond to orders within a one-second time period.
Liquidity

On May 6, there was a significant dislocation of liquidity in the E-Mini contract. Liquidity reflects the ease with which certain amounts of an asset can be bought or sold without exerting a significant effect on its price. A high level of liquidity can help facilitate fair and orderly trading.

Although market liquidity is not directly observable, CFTC staff reviewed multiple indicators of liquidity in E-Mini futures: trading volume, bid/offer spreads and the depth of the limit order book. High liquidity may manifest itself as high trading volume, narrow bid/offer spreads and/or high depth of the order book.

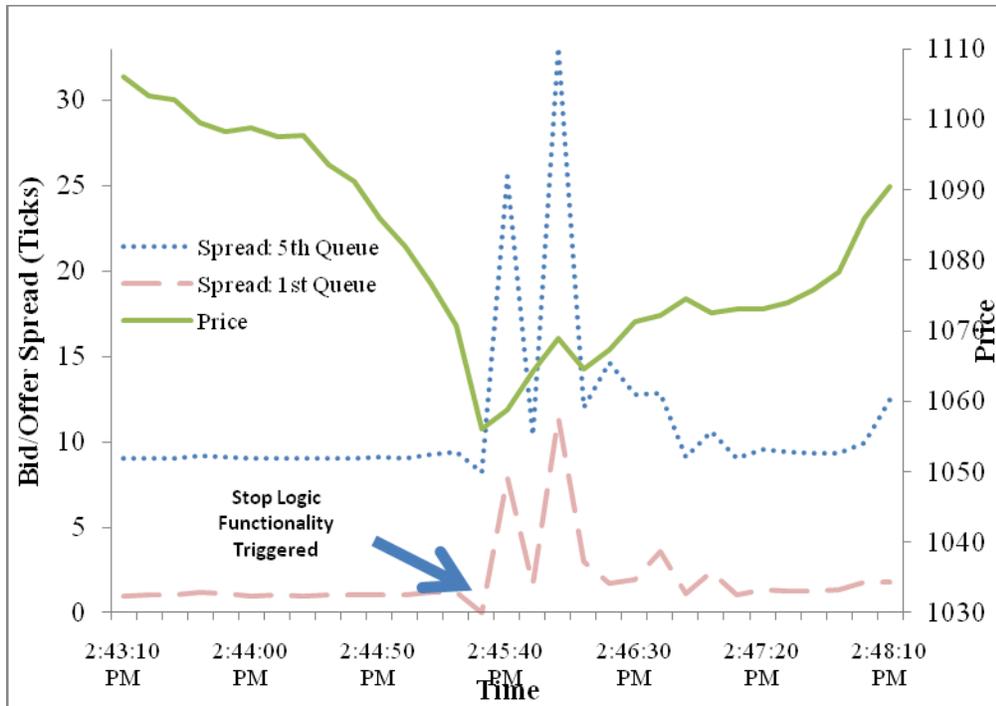
On May 6, trading volume was very high. Usually, high volume indicates high liquidity. On this day, however, high volume could have been a misleading indicator of liquidity to market participants and their pre-programmed algorithms. Higher trading volume, when it is associated with high price change, may not be a good indicator of liquidity because many orders could have been executed at falling prices. This particular high trading volume was accompanied by significant fluctuations in trading volume. Further, the daily trading activity did not result in a significant increase in the number of futures contracts held by market participants at the end of May 6. This implies many investors participated in the market intraday, but on balance few investors increased their positions by the close of trading. The figure below illustrates May 6 trading volume in relation to the prior month’s average volume.



Source: CME Group

The two other measures of liquidity we reviewed – the bid offer spread and the depth of the limit order book – suggest that liquidity was dislocated. When the CME’s stop logic functionality took effect on the E-Mini contract, the bid ask spread had widened significantly. This means the liquidity was lower and the transaction costs were higher.

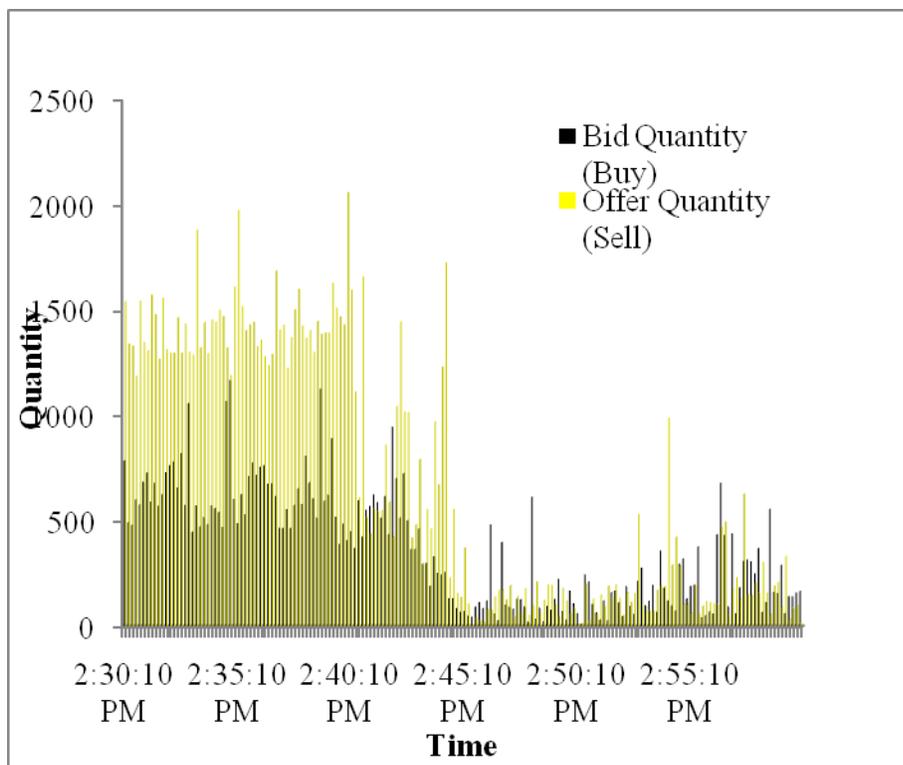
The figure below presents the bid/offer spreads for the first best and fifth best quotes of the E-Mini contract, focusing on the period between 2:43 pm and 2:48 pm.



Source: CME Group

At 2:30, the depth of the limit order book also indicated an order imbalance. There were many more resting sell orders than buy orders in the limit order book. At about 2:45 pm, as the price declined, the depth of the limit order book declined dramatically. Essentially, the evidence suggests that there may have been many more sellers than the market could accommodate at that point in time.

The following figure illustrates the depth at the fifth best bid and offer quotes between 2:30 and 3:00 pm. It shows that significant order imbalances existed between orders to buy and orders to sell. At around 2:45, depth declined dramatically.



Source: CME Group

Starting at 2:45:28 pm, CME’s Globex stop logic functionality initiated a five-second pause in trading in the E-mini S&P 500 futures. This functionality was initiated when the last transaction price would have triggered a series of stop loss orders that, if executed, would have resulted in a cascade in prices outside a predetermined “no bust” range (6 points in either direction in the case of the E-mini). The prices of the E-Mini traded at a higher price coming out of the reserve period of this pause.

Large Traders

CFTC staff reviewed the trading activity of the ten largest traders in the E-Mini market by net volume and by gross volume to ascertain whether there were significant imbalances between large buyers and sellers in the market. For two intraday time periods – 2:30 to 2:45 pm and 2:46 to 3:00 pm – the net volume was computed for each account in the E-Mini contract. During the period from 2:30 to 2:45 pm the top ten net buying accounts bought 51,526 contracts more than they sold. The top ten net selling accounts sold 72,186 contracts more than they bought. During the period from 2:46 to 3:00 pm, the top ten net buying accounts bought 49,180 contracts more than they sold. The top ten net selling accounts sold 67,544 contracts more than they bought.

In addition, CFTC staff identified the top ten most active accounts by gross volume between 2:00 pm and 3:00 pm. Of those ten, nine trading accounts executed trades on both the long and short side of the market. For these trading accounts, there was a relative balance of activity between the long and short sides of the market.

One of the top ten most active trading accounts by gross volume between 2:00 pm and 3:00 pm only entered orders to sell. That trader entered the market at around 2:32 pm and finished trading at roughly 2:51 pm. The trader sold just less than half of its contracts as the market went down and just more than half as the price level rose.

We understand that this particular market participant sought to hedge its stock portfolio in the futures markets by selling a pre-determined amount of futures through an executing broker's automated execution system. In this circumstance, we further understand that the trade was executed through an executing broker's algorithm that was meant to limit market impact by limiting volume at an average of nine percent of the volume traded during that period.

When a market participant limits their trading volume in such a way, it generally is doing so to try to limit market impact. In normal markets, market participants would anticipate lower market impact by restricting their volume to some single digit percent because they generally view that higher volume is a reasonable proxy for better liquidity.

In the market on May 6, however, as the staff preliminary review indicates, higher volume did not necessarily mean better liquidity. Such a volume restriction built into an automated execution algorithm may have been ineffective and may have had an unintended market impact. From 2:30 pm to 3:00 pm, however, this market had 10 times higher volume than the average daily trading volume for the same intraday time period over the previous month, without the concurrent increase in liquidity. On May 6, it took about 21 minutes for the participant to execute their sell order. In markets with average volume, it would have taken significantly longer – perhaps hours.

Next Steps

The CFTC will continue its analysis into the events of May 6. Specifically, CFTC staff is carefully reviewing the activity of the largest traders in stock index futures.

Staff intends to pursue a joint study to examine the linkages between correlated assets in the equities, options and futures markets. The study could partly focus on examining cross-market linkages by analyzing trading in stock index products such as equity index futures, ETFs, equity index options and equity index over-the-counter derivatives using, to the extent practicable, market data, special call information and order book data.

Changes in the marketplace to electronic execution demand adequate protections for the public. We intend to carefully review the activities of executing firms that act as gateways into electronic trading platforms. We will ensure that computer algorithms that interact with each other and meet in a central marketplace – those of executing brokers, high-frequency traders and market makers, amongst others – do not threaten fair and orderly markets.

As the CFTC continues to review the role high-frequency and algorithmic trading played in the market events of May 6, we also are considering a rule related to co-location.

Separately, we also are considering a rule related to account identification so that the CFTC can collect better and more-detailed information on each trader in the futures markets.

Once again, I want to thank Chairman Schapiro and the SEC staff for the cooperative and highly professional way they have worked with the CFTC on these matters.

I thank you for inviting me to testify today. I look forward to your questions.