THE UNITED STATES SECURITIES AND EXCHANGE COMMISSION

JOINT CFTC-SEC ADVISORY COMMITTEE ON EMERGING REGULATORY ISSUES

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P R O C E E D I N G S

CO-CHAIR SCHAPIRO: Good morning. Chairman Gensler and I are pleased to welcome you and to call to order this first meeting of the Joint CFTC-SEC Advisory Committee on Emerging Regulatory Issues.

Today is May 24, 2010, and this meeting is being held in accordance with the Government in the Sunshine Act.

All members of the Committee except one are present either in person or telephonically. I believe Drs. Engle, O'Hara, and Stiglitz are on the telephone, and Dr. Ruder has an unavoidable conflict, although he may be able to join us later.

Before we begin, let me make a few logistical points. First, Gary and I are co-chairing the Joint Committee meeting and as co-chairs we'll share responsibility for leading our discussions today. So if you'd like to be recognized, please just turn your tent card on end, and we'll try to recognize you as soon as possible.

Also, for those of you who are joining us by phone, if you could please make sure you have your phone on mute when you're not speaking, that would be enormously helpful, as we are being Webcast and interference, I think, will make it difficult for many listeners and watchers.

And now, I want to turn it over to Chairman

Gensler.

CO-CHAIR GENSLER: Good morning. I would like to start by thanking Chairman Schapiro for all of her efforts on behalf of the investing public, as well as the staff of the SEC for hosting this first meeting of our Joint Advisory Committee on Emerging Regulatory Issues.

I also want to thank my fellow CFTC Commissioners, Mike Dunn, Jill Sommers, Bart Chilton, and Scott O'Malia, for all of their support in establishing this Joint Committee and for all of their work on behalf of the American public. I know that each of us look forward to receiving the advice of this expert panel.

It was during the presidential transition actually that Chair Schapiro and I first discussed possibly setting up a Joint Advisory Committee. Little did we think it would take a year and a half, a joint harmonization report, an act of Congress and, yes, a 1,000 point drop in the Dow before getting it done, but I'm pleased that we're here finally for our first meeting of the Committee.

And an Advisory Committee designed to view emerging risk in our financial markets is long overdue. While I am not suggesting if we had had this Committee up five or ten years ago we wouldn't have had the financial crisis, I do believe that there were emerging risks that demanded thoughtful analysis, whether they were the use of new

products like credit default swaps or developments in the

securitization markets or, more recently, rapid advancements in technology and significant changes in market structure. We can be certain that we will continue to see innovations in the markets that will require thorough review.

I think also that the CFTC and SEC will benefit greatly from hearing from an Advisory Committee together. In fact, this is the first time our two agencies have ever shared an advisory committee and that we have been two separate agencies since the 1930s. We both exist to protect the investing public and promote transparent, fair, and orderly markets.

Our two agencies' oversight spans across future securities and, hopefully shortly, the over-the-counter derivatives market places. It's essential that we work cooperatively to regulate these markets, and this Committee can assist us in achieving that goal.

The CFTC and SEC will benefit from having outside experts thinking about emerging risk to markets, advising us on them. This morning's meeting and more generally the Joint Committee is about looking around corners, looking into the future about where we need to take regulation.

And markets do change. Market structures, practices, technology, all change, and they change rapidly. There's constant innovation. I hope the Committee of outside

investors can help us insure that regulation stays abreast of

these changes.

Our panel is comprised of a diverse and accomplished group. I'm pleased that we have three former Commission Chairmen. We also have three distinguished and award winning professors of economics and finance, and a former director of one of the largest asset management firms in the world and head of an independent regulator.

The first task, of course, is we are looking at May 6th. Those events have significant implications for investing public and the American businesses. It's essential we continue our review and with the contributing circumstances of price volatility, more work must be done to accomplish this goal.

The Committee has had an opportunity to examine the staff findings released. I wish to thank the staffs of both the SEC and CFTC, an enormous amount of work around the May 6th report, and though there's much to do, the staff has examined liquidity dislocations, linkages between markets and the role of electronic and algorithmic trading, and today we look forward to hearing from the staffs and having the panelists ask questions.

With that, I thank you, and I turn it back to Mary.

CO-CHAIR SCHAPIRO: Thanks, Gary.

We're going to tag-team on the introduction of the

Committee members, but let me also acknowledge the presence

of my fellow Commissioners and thank them for their support really during the last year and almost a half that I've been here, but most particularly since the events of May 6th that have required us to move very quickly on a number of fronts:

Commissioner Kathleen Casey, Elisse Walter, and Troy Paredes, and I assume that Commissioner Aguilar will be joining us at some point.

Gary, do you want to start the introductions?

CO-CHAIR GENSLER: If I can just find where I'm supposed to turn to to do that. Ah, here we go.

We're pleased to have eight distinguished members of the Committee, and the Chair and I extend our appreciation for them taking the time. Now, if I may introduce, Chairman Born, if I may call her that, is a retired partner of Arnold & Porter, where she was the head of the firm's derivatives practice representing domestic and international clients and legislative, litigation, regulatory, and transactional matters involving derivatives transactions in financial markets from '96 until 1999. When we first met actually, Brooksley held the position that I am now honored to hold, the Chair of the CFTC. While at the CFTC, Ms. Born served as a member of the President's Working Group on Financial Markets and Technical Committee of IOSCO, and I believe currently is also on the Financial Crisis Inquiry Committee.

Do we tag-team or do I keep going?

CO-CHAIR SCHAPIRO: You keep going.

CO-CHAIR GENSLER: I keep going. There, I learned.

Rick Ketchum to my left is Chairman and Chief Executive Officer of FINRA. Before assuming his current responsibilities, he was CEO of NYSE Regulation from 2006 to 2009. He served as the first chief regulatory officer of the New York Stock Exchange. Mr. Ketchum was previously General Counsel of the Corporate and Investment Bank at Citi Group. He also spent 12 years in NASD and the NASDAQ Stock Market, where he served as President of both organizations, and prior to that he spent 14 years at the SEC, has a wealth of regulatory and market knowledge. So we thank him for joining us.

CO-CHAIR SCHAPIRO: To my right is Jack Brennan, the Chairman of the Financial Accounting Foundation, Board of Trustees, which is the independent private sector organization responsible for oversight of the FASB and GASB. He also is the Chairman Emeritus and senior advisor of the Vanguard Group, which I believe is now the largest asset manager -- mutual fund company. Sorry.

Mr. Brennan previously served as Vanguard's Chairman and CEO and, among many other industry activities, was past Chairman of the Investment Company Institute and is a Governor of FINRA.

Professor Robert Engle, who is joining us by phone,

is the Michael Armellino Professor of Finance at New York University's Leonard N. Stern School of Business. In 2003, Professor Engle was honored with the Nobel Prize in economic sciences for his work in methods of analyzing economic time series with time varying volatility.

To Jack's right is Dean Susan Phillips. Susan has just retired as a Dean of the George Washington University School of Business. Her areas of specialization include monetary policy, regulation and supervision of financial institutions, derivatives, financial management, and the economic theories of regulation.

In 1981, Dean Phillips was appointed to membership on the CFTC, where I had the distinct honor and pleasure of working for her, and she became its Chairman in 1983.

Upon leaving the CFTC in 1987, she returned to academia at the University of Iowa, but then was called back to Washington to serve on the Board of Governors of the Federal Reserve System, and she has authored dozens of scholarly publications.

CO-CHAIR GENSLER: The next member of the Joint Committee joining us by phone is Professor Maureen O'Hara. Professor O'Hara is the Robert Purcell Professor of Finance at Cornell University's Johnson Graduate School of Management. Professor O'Hara's research focuses on issues of

market micro structure, and she is the author of numerous

journal articles, as well as the book Market Micro Structure Theory, which is going to be very helpful in what we're looking at here.

Her most recent research looks at the role of uncertainty in affecting the liquidity and valuation of securities.

Next, also joining us by phone is Professor Joseph Stiglitz. Professor Stiglitz is a Professor of Finance and Business at Columbia University and chair of the University's Committee on Global Thought. He is also the co-founder and Executive Director of the Initiative for Policy Dialogue at Columbia.

In 2001, he was awarded the Nobel Prize in Economics for his analysis of markets with asymmetric information. He was a lead author of a 1995 report of the Intergovernmental Panel on Climate Change, which shared the 2007 Nobel Peace Prize, quite an accomplishment.

Professor Stiglitz was a member of the Council of Economic Advisors from 1993 to '95, and served as its chair from 1995 to '97. He has also served as Chief Economist, Senior Vice President in the World Bank; has chaired both the Commission of Measurement of Economic Performance and Social Progress and the Commission of Experts on Reform of the International Financial and Monetary System.

CO-CHAIR SCHAPIRO: And finally, last but certainly

not least is David Ruder, who has an unavoidable conflict, out of the country today and is unable to be with us, but David is the William W. Gurley Memorial Professor of Law Emeritus at Northwestern University School of Law, where he previously served as Dean.

From 1987 to 1989, Dr. Ruder served as Chairman of the Securities and Exchange Commission, and he is currently Chairman of the Mutual Fund Directors Forum.

We are, indeed, fortunate that this Committee is made up of some of the brightest minds in the country, and we are deeply in their debt that they have agreed to help provide the SEC and the CFTC with their views and perspectives on the emerging regulatory issues that affect both agencies. Chairman Gensler and I both look forward to benefitting from your insights and wisdom.

The establishment of this Joint Committee was one of the 20 recommendations included in the agencies' harmonization report issued last year. The mandate of this Committee is broad. It's charged with identifying emerging regulatory risks relating to both the SEC and the CFTC; assessing and quantifying the impacts of such risks, including their implications for investors and market participants; and furthering the agencies' efforts on regulatory harmonization.

The events of May 6th certainly highlight the need

to identify risks and engage in meaningful regulatory cooperation. As you well know, during a 20-minute period on that afternoon, the U.S. financial markets failed to execute their essential price discovery function, experiencing the decline and recovery that was unprecedented in its speed and scope. That period of gyrating prices both directly harmed investors, who traded based on flawed price discovery signals, and undermined investors' faith in the integrity and the fairness of our markets.

The events of May 6th serve to remind us once again that our financial markets are inexorably linked. Events that occur on markets regulated by one agency inevitably affect the markets regulated by the other. Given this, Chairman Gensler and I agreed that the first item on this Joint Committee's agenda should be to conduct a review of the market events of May 6th so that we can be sure we fully understand how market structures, disparate trading conventions, different rules across markets and other factors contributed to the events of that day, and so that we can begin to craft appropriate regulatory responses.

Over the last 18 days, the staffs of both agencies have been hard at work conducting a comprehensive investigation. Last Tuesday, CFTC and SEC staff released a joint report detailing the preliminary findings of our

investigation.

In addition to working with the CFTC on the joint report, at the SEC we have worked with the securities exchanges to fashion measures to help protect against a May 6th recurrence by imposing a limit on the extent to which certain individual stock prices can move before trading in that stock is paused. These proposed circuit breakers have been published for comment for ten days.

At this stage we continue to focus on the events that may have triggered the unusual volatility, but regardless of the triggering cause, we believe that the initial volatility was magnified by a variety of factors. Areas I expect we will probe further with the Committee's input include the possible linkages between the steep decline in the prices of stock index products and simultaneous and subsequent waves of selling in individual securities; a generalized severe mismatch in liquidity possibly exacerbated by the withdrawal of liquidity by electronic market makers; the possibility that this liquidity mismatch may have been aggravated by disparate trading conventions among various exchanges; the possible involvement of stub quotes; the use of market orders and stop loss orders that might have contributed to market instability; and the impact on exchange traded funds which suffered a disproportionate number of broken trades.

Even before May 6th, the Commission had launched

initiatives to strengthen the U.S. securities markets and to protect investors. We had proposed rules that would prohibit flash orders, increase the transparency of dark pools of liquidity, prohibit broker-dealers from providing unfiltered access to exchanges, and proposals to create a large trader reporting system.

Earlier this year we also issued a concept release on market structure that solicited public comments on the impact of different trading strategies, including high frequency trading on our markets and investors. These issues will also be at the center of a market structure roundtable which we're holding in a couple of seeks.

And on Wednesday of this week, the Commission will consider a proposal to create a consolidated order tracking system to allow effective cross-market surveillance.

Let me thank the Committee again for joining us today, and I look forward along with you to the staff's presentation and ensuing discussions. So now I'll turn the meeting over to the staff so that the CFTC and the SEC, who I just have to say have been working tirelessly over the last 18 days to present their preliminary findings to the Joint Committee.

Let me introduce Robert Cook, the Director of the SEC's Division of Trading and Markets, to introduce the

presenters.

Robert.

MR. COOK: Thank you, Chairman Schapiro.

Good morning. Before we begin our presentation, on behalf of all the staff, I'd like to welcome the members of the Joint Advisory Committee and to express our deep appreciation to you for agreeing to offer your time, your insights, your expertise to the Commission staff as we work to address the issues associated with the market events of May 6th and, beyond that, to further strengthen and harmonize the work of our two agencies. We look forward to working with you.

I'd also like to express our appreciation to our Chairmen and to the Commissioners from both agencies and to thank them for the invaluable leadership and support they provided us over the last few weeks. We look forward to continuing to work to strengthen our markets under your steady guidance.

I'm joined today by some colleagues from the SEC staff: David Shillman, Associate Director for the Office of Market Supervision in the Division of Trading Markets; and from our Division of Risk Strategy and Financial Innovation, Co-Deputy Directors Jonathan Sokobin and Gregg Berman.

I'd like to take this opportunity to thank the many staff at the SEC both here in Washington and the many

regional offices who have been working very hard over the

last few weeks and who will be working very hard over the coming weeks on this project. There are far too many names to mention, but their contributions deserve our collective appreciation and acknowledgement.

Let me turn it over to my colleague, Steve Sherrod, to introduce his staff.

MR. SHERROD: Thanks, Robert.

I want to join Robert in thanking the Advisory Committee and my Commissioners and Chairman Gensler -- particularly at last Friday's surveillance briefing where they asked many probing questions that we continue to investigate.

Joining me today are Andre Kirilenko from our Office of Chief Economist, on my left, and Richard Shilts, the Director of our Division of Market Oversight.

As Robert mentioned, we have had a tremendous staff effort to bring all hands on deck to work on this issue over the last two weeks.

Robert.

MR. COOK: So just to briefly review the agenda for this morning, first Steve is going to provide an overview of the general market conditions on May 6th to set the stage and the context for discussing what happened in the futures and securities markets that afternoon.

Next I, with the help of Gregg, Jonathan and David,

will summarize the preliminary findings from the securities side of the markets, and then Steve will summarize the preliminary findings from the futures side, and then we'll have some time reserved to take your questions regarding these preliminary findings.

And then in the second half of the morning, we will talk about next steps and analysis both on the securities and the futures and through joint collaboration.

Before we begin on the preliminary findings, I think it might be worth making one caveat. The investigation into these events is continuing, and the joint report that we prepared for you was able to capture only our preliminary findings within a relatively short period of time.

In addition, as we'll discuss a little bit more later, the reconstruction of the relevant events is complicated by the enormous amount of data involved, which is being compiled on the securities side from multiple sources that do not have a consistent framework for collecting, formatting, and structuring data regarding quote and trade activity, all of which is to say that we need to keep in mind that the information we're presenting today is subject to change as we validate and correct data that we have and incorporate new data into our analysis.

So with that, let me turn it over to Steve to give

us some general context on the market.

MR. SHERROD: Thanks, Robert.

Throughout the day on Thursday, May 6th, many financial news outlets were reporting on political and economic events that were creating uncertainty in the financial markets. As reports highlighted the perceived increased risk of default of certain European countries, there was downward pressure on the euro in global currency markets. We particularly note the European Central Bank held a press conference and did not address the possibility of purchasing Greek government bonds.

This raised concern over defaults, as reflected in an increase in the price of premiums on credit default swaps to protect against such events.

Throughout the day we also observed a broad decline in the U.S. equity market as all major broad based equity indices and equity index futures contracts spent much of the morning and early afternoon in negative territory. This decline in equity markets coincided with a rise in expected volatility as captured by the rise in the CBOE S&P 500 volatility index, usually referred to as the VIX.

Prior to May 6th, the VIX in 2010 had averaged about 20, indicating a relatively low level of expected market volatility as compared to the levels that prevailed in 2008 and 2009. On May 6th, however, the VIX began the day at

about 26 and reached levels of about 40 during the day.

Beyond the effect that economic news was having on credit and equity markets, there was also evidence of a flight to quality as investors sought to extract funds from perceived risky investments and to place them into what are viewed as safer investments, such as U.S. Treasuries and gold. This is evidenced by the fall in the ten-year Treasury yield from a level of 3.58 percent on May 5th to an intraday low of 3.26 on May 6th, before settling at 3.41 for the day.

Gold prices, which normally rise in times of market uncertainty, rose on the COMEX where the nearby gold futures contract went from approximately $1180 per ounce at the opening to $1210 per ounce at the 1:30 p.m. Eastern time close.

In addition to the flight to quality, global currency markets were indicating concern over the European Union. Shortly after 1:00 p.m., the euro began a sharp decline against both the U.S. dollar and the Japanese yen.

CO-CHAIR GENSLER: Just for those on the phone, we're looking at Slide 6. If you might mention.

MR. SHERROD: Sure, sure. Moving on to Slide 7, during the afternoon on May 6th, staff observed continued pressure in the market, and equity prices continued to decline, along with the increasing expectations in the market for the VIX for volatility.

Between 2:00 and 2:30 p.m., there was an increase

in the number of liquidity replenishment points or LRPs triggered in the NYSE's trading system. These LRPs are intended to dampen volatility by triggering what is known as a go slow period of trading where additional liquidity is allowed to enter the market. My colleague will discuss LRPs further in his testimony about findings in the securities markets.

The existing market decline accelerated and implied volatility sharply increased. By approximately 2:45 p.m., over 200 securities had fallen 50 percent or more from their 2:00 p.m. levels. Between 2:45 and 2:47 p.m., the Dow, S&P 500, and NASDAQ 100 all reached daily lows.

During that same period, all 30 Dow components reached their intraday minimum, representing a range from 4 to 36 percent below their opening levels. The Dow bottomed at about 9872, the S&P at about 1065, and the NASDAQ at about 1752. The E-mini S&P 500 index futures contract, the June 2010 contract, bottomed at 1056.

There were also instances of securities exchanges declaring self-help against another exchange. A declaration of self-help freed the declaring exchange from their obligation to route orders to the affected exchange, and again, my colleague will discuss self-help further in his presentation.

In the futures markets, a confluence of economic

events, signals from various other markets, and a market increase in sell orders in comparison to buy orders in the limit order book suggest that a significant dislocation of liquidity in the E-mini S&P 500 futures contract may have occurred.

After bottoming, equity and equity index futures markets began to rebound. At 2:50 p.m., the Dow was trading at 10,232, and the E-mini S&P 500 was trading at 1,096. The E-mini futures contract climbed further. By 2:53 p.m., it was at 1,118, and the Dow closed at 10,520, down more than 347 points, or 3.2 percent from the prior day's close. The E-mini settled at 1,122, or down about 41.5 points from the prior day's close.

And we'll turn to the next slide with Robert.

MR. COOK: Thanks, Steve.

We'll now zero in a little more closely on the preliminary findings presented in the report with respect to the securities markets. The events of the afternoon of May 6th with respect to the securities markets can usefully be described in terms of two broad but related themes. The first is a precipitous drop of the major securities indices, as Steve just noted, of more than five percent, followed immediately by a rapid recovery, which occurred consistently across various broad indices and products.

The second are the even more extreme price

fluctuations, mostly losses, that occurred for certain individual securities which were followed relatively promptly by reversions to the price levels consistent with the broader market.

Moving on to Slide 10, for those of you who can't see the presentation, and zeroing in a little bit more on the graph showing how the indices moved during that day and to just kind of go through the key hour period where we're going to be focusing most of our attention this morning.

So up until about 2:30, there was a significant but not extraordinary down day that was consistent with many of the economic factors that Steve just reviewed, but then the market decline began to steepen. At approximately 2:40, prices declined with extraordinary velocity.

By the way, we use 2:40 p.m. a lot in this presentation because it's a useful benchmark for the market prices just before the steep market decline. So you'll often hear us referring to 2:40 p.m.

So by 2:42, the Dow is down 3.9 percent. It then suddenly dropped 573 points, which was an additional 5.49 percent, in just five minutes of trading, and you can see that spike downward there. By 2:47, it was down 9.16 percent from the previous day's close.

25 The market then suddenly and dramatically reversed

itself, recovering 543 points in about a minute and a half. By 3:00 p.m., the Dow was down 4.26 percent, and it ended the day down 3.2 percent. And as you can see from this slide, there are similar patterns occurring with respect to the S&P 500 index.

So while the overall market had a significant down day, the closing numbers don't really tell the full story of these dramatic moves down and then up during the 20 minutes of trading in the mid-afternoon. Understanding the trading activities that contributed to these plunge and recovery, as well as the market structures that permitted it, are obviously crucial areas for further analysis.

In this regard, one of the key areas we're focusing on is the linkages between the cash and the futures market. As indicated in the graph, the precipitous decline in stocks and their subsequent recovery correlated very closely with a drop in recovering the value of the E-mini S&P 500 future contract. In a sense, this basically reflects basic market dynamics since much of the price discovery in the broader stock market can occur in the futures markets and traders who believe that one market is overpriced might sell in the other market and/or buy in the other market if they believe the other market is underpriced.

So given that the E-mini price fell by more than

five percent in five minutes and then quickly rebounded after

the CME stop logic functionality was triggered, which Steve is going to get into more later, it really isn't surprising that the broader stock market indices showed similarly fast and similarly large declines and recoveries, but of course, the fact that the two moved together doesn't tell us exactly what triggered the price movements.

Steve will be speaking later about some of the potential sources of selling pressure in the E-mini contract that came during that vulnerable time. I'll be talking later about some of the potential sources of selling in the securities markets. But I think the key point here is the linkages between the two markets and understanding how one affected the other because of the potential impact that can occur when a trigger occurs in either markets, the follow-on effects for the other market.

Moving to Slide 11, this just gives you some of the numbers more precisely for the percentage daily lows relative to the prior day's close. As you can see, each index or product reached its daily low between 2:45 and 2:47 and then recovered over the course of the day to a level higher than their 2:40 p.m. values.

Note that the daily decline for the Dow was less than ten percent, which is the first trigger for the existing market-wide circuit breakers. So even if the Dow had gone

25 below ten percent during this time, because it was after 2:30

p.m., that would not have triggered the existing circuit breakers. The Dow would have had to go down 20 percent after 2:30 p.m. in order to trigger the first halt under existing market-wide circuit breakers.

We go to Slide 12. This slide helps demonstrate the impact of the market declines on the individual securities. It's a scatter plot representing the lowest transacted price for a given stock on May 6th. Each dot represents one stock, and the low return is calculated from the previous day's close.

Most securities, about 86 percent, stayed within ten percent of their 2:40 p.m. price. You can see a red dot for the low in the S&P 500 just above the minus ten percent line. Approximately 14 percent of securities reached lows that exceeded ten percent of their 2:40 p.m. price.

You'll see a significant number of stocks had a low transaction for the day well before the market instability. These low transactions increased as you moved to the right over the course of the day, but at about 2:45, there's a wave of low trades as seen in the large blue mass at the bottom. This cluster reflects a significant number of transactions that occurred at prices close to zero, which may have resulted from executions against stub quotes.

We'll be talking quite a bit about stub quotes

today, and it's discussed in the report. Stub quotes refer

to quotes that are posted by a market maker in order to satisfy the requirement to make a two-sided market, but because the market maker is unwilling or unable to provide liquidity at the time, it puts up quotes at such a low or high prices, such as a penny or $100,000, that they are not really intended to be executed.

We have highlighted in this chart two stocks, A and B, which we'll examine a bit more closely in a few minutes. Stock A suffered a significant decline, and Stock B traded at levels close to 100 percent loss.

If we move to Slide 13, this table helps describe the lows during the "hot" period from 2:40 to 3:00 p.m. You'll see approximately seven million trades occurred during this time for almost two billion shares. Note that almost 70 percent of trades were executed for a loss relative to the 2:40 p.m. price. The bulk of the trades, almost 98 percent of the loss, of the loss trades, or 69 percent of all trades, were executed within ten percent of their 2:40 p.m. price. Thus, the largest overall losses occurred within the ten percent range, which is not too surprising, given that the indices as a whole bottomed out just above the ten percent loss level.

But this does highlight the importance of addressing the issues that caused the precipitous plunge and

recovery of the broader indices. Even if we do not have

other securities whose value tumbled down to zero, as reflected in the histogram you just saw or the scatter plot you just saw, the losses to the securities track the index were still enormous.

We're now on Slide 14. This scatter plot represents the highest transacted price for a given stock for the day, where that price had highs above zero relative to the prior night's close. Note that there are far fewer positives here than there were negatives in the scatter plot we saw moments ago in the left-hand side of the chart, but you can see a mass starting at around 2:43 p.m.

In addition, a small number of stocks transacted at even higher prices. We've identified five stocks that transacted at $100,000 per share. Again, these are likely the result of executions against stub quotes.

Unlike in the scatter plot for the daily lows in which there are several extreme lows occurring throughout the day prior to 2:40, here there do not appear to have been any extreme highs prior to about 2:44 p.m.

I would like to just sort of zoom in even closer on a couple of selected securities so you can get a sense for what was happening at the time, and Gregg is going to walk us through two selected stocks, and we're now on to Slide 16 in your materials.

MR. BERMAN: Thanks, Robert.

I'll draw everybody's attention to Slide 16, which shows 90 seconds of trading for a particular large cap stock. The first thing to notice is what's not on this graph, namely, the S&P low or the Dow Jones low. This is occurring at about 2:47, which is a full two minutes after the lows of the major market indices. The graph is constructed to show the range of trading and how that trading fits into the bid and asks that were occurring during this 90 second period.

The red thick line at the bottom of the trading range represents over each second the absolute worst national best bid. So during a second period we should see a range of bids and this one represents the worst. Hence we should not expect to see trades below that.

Similarly, on the up side we have the green line, which represents the absolute best offer during a second period across all exchanges, and we should not expect to see trades above that. The first thing to notice is that as the stock began to decline, we do see some trades that spike above the green line. Whether or not those are artifacts of timing or those are actual trade-throughs remains to be seen and requires further investigation.

The more interesting part is on the decline, which started at about 2:47 and continues for about 15 seconds before hitting the lows. What we see is that the trades did

not break through or trade through the lowest bids, but that

the rapid decline in price truly represents a dry up of the liquidity and the collapsing of the bid prices themselves.

We had trades that went from the bid to the offer and back and forth within a one second period of time. The offer side collapsed about where the lows are, and you can see that in the green dot, the green line collapsing in the middle, and we also see some trade-throughs or potential trade-throughs at that time.

As quickly as the stock fell, the bids immediately climb after hitting the low. The trades follow up the red line. The bid-ask spread narrows, and by the end of the 90 second period we actually have a recovery that is greater than the initial loss to begin with. So all of this happens in a minute and a half, and part of the next step of our research is to understand better how the bids themselves collapsed which we are not able to see on this particular chart.

Now, this represents an example of a stock that had a very large decline, but did not fall all the way to zero. In the next example, on Slide 17, we see a dramatically different picture. This stock starts off with a tight bid-ask at just before 2:48. Again, this is after the market has declined and while the broad market itself is on the rebound. And for reasons which we still need to explore, the

bid side completely collapses in a five second period.

During that five second period, we see trades at $20. This was the stock that was priced $40 five seconds previously. We have within the same second trades going at $7, $5 and $32 at the offer side. So all of this is within a one second period of time.

Finally, by the time you get to 2:47 and 51 seconds, we see that the bid side has collapsed to zero and that there are actually trades being executed at those prices. Now, this, again, is important because this does not mean that see bids that are going through or trades that are going through the bid-ask. There is a matching mechanism by which someone had to trade in and was agreeing to sell for a penny. Somebody had to trade in and was agreeing to buy for a penny.

Whether or not that was an intention or was that a ramification of the way the systems and possibly stop orders worked remains to be seen, but the market nevertheless stayed for a full ten seconds or so at stub quotes of a penny or more, and again, as rapidly as it collapsed, it automatically rose again. After 2:48 we see a few trades that are still at stub quotes that may not have caught up with the rising bid-ask, and then by 2:48 and 5 seconds, we see that the bid-ask spread comes back to pre-collapse levels, even though you'll notice that there are actually no trades during that

period of time. So even though there is very, very little

activity for the last ten seconds or so of this slide, the bid-ask spreads and the quotes have retained normal level.

MR. COOK: Thanks, Gregg.

I think it's important to emphasize that these are just two examples of experiences of two particular stocks. The first stock was a component of the Dow and the S&P 500. The second stock that went down to penny trades is a component of the Russell 1000 index. There are many obviously different stories with respect to each different stock, and I didn't want this to suggest that there's only two patterns at play here. There are many different patterns that we've observed, but it helps to show the decline in a stock that declined significantly, but eventually recovered before it hit bottom, and in Stock B a stock that went all the way down to penny trades within a very short period of time.

So now we'll talk a little bit about broken trades. If you look at Slide 19, we have the table that we had shown you before on the distribution of low trades relative to the 2:40 p.m. price. We've highlighted near the bottom here the trades that were eventually broken pursuant to exchange rules. So after the trading day on May 6th, the exchanges determined to break all trades between 2:40 p.m. and 3:00 p.m. that executed at prices different, up or down, from the

25 2:40 -- sorry -- prices 60 percent or more away up or down

from the 2:40 p.m. price.

The exchanges do this pursuant to their clearly erroneous execution rules that are designed to permit them to cancel trades that in their determination were clearly entered into in error.

Of the broken down trades, the bulk transacted at prices 90 percent or more from their 2:40 p.m. price, as you can see at the bottom row on the table. The overall market value of the shares involved in the broken trades was, of course, small due to the artificially low share prices involved. But the shares involved in these trades would have been valued at 212 million if we used their 2:40 p.m. benchmark price.

If we move to Slide 20, in this figure, we show the time distribution of the broken downward trades. This sample includes all trades identified by the exchanges as broken. So we show some small number of broken trades that occurred outside of the 2:40 to 3:00 p.m. time frame. But most of the broken trades transacted between 2:45 and 2:55. There were about 11,400 or so broken trades between 2:45 and 2:50 and about 4,700 broken trades between 2:50 and 2:55.

You remember from the scatter plot that we showed earlier a significant number of these broken trades, about 43 percent, were at stub quote prices, here identified as less

than a nickel. Stub quote executions occurred in more than

200 securities, including large, medium, and small cap issuers, but with a concentration in small cap issuers, which would be consistent with the tendency of these stocks to have less liquidity and thus a greater likelihood that sell interest could overwhelm order books in times of heightened volatility.

If we move to the next Slide 21, we received information about short sale trades from the exchanges and FINRA. They provided us with a flag for each broken trade that was identified as a short sale, and here we've laid that information on top of the same table. So for the critical ten minutes, 2:45 to 2:55, short sales appear to represent an important fraction of trades executed at prices below a nickel. Shorts appear to represent about 70 percent of the trades from 2:45 to 2:50 and 90 percent of the trades between 2:50 and 2:55, not all trades, but we're talking about about the stub quote trades.

While this analysis is very preliminary and we have not been able to verify the accuracy of the data we have received, this phenomenon is something we will study closely. We need to understand any role that short selling played more generally in connection with the market decline.

We can speculate that these trade were the result of short sale market orders, but they could not bid a bid

above a nickel. We can also speculate that the parties would

not have intended to sell short at these low levels. Note that the short sale executions against stub quotes at or below the national best bid would have been subject to the alternative uptick rule that was adopted by the Commission early this year, but won't be effective until November 10th of 2010.

If we look at the next Slide 22, we can talk a little bit about the types of securities that had broken trades. This table is also based on data provided by the exchanges and FINRA. All told, there were 326 securities affected. Of these stocks, 56, or about 17 percent, were primarily listed on the New York Stock Exchange; 225, or 69 percent, were primarily listed on Arca. No doubt, stocks had broken trades. About 12 S&P 500 stocks had broken trades and 30 stocks in the Russell 2000 were broken.

Remember that this doesn't mean that there were no serious losses in these other categories, just that the trades in those other categories were within the 60 percent threshold established for determining whether the trade would be broken.

Importantly, about 227, or almost 70 percent of stocks with broken trades, were ETFs. The 99 securities with broken trades that were not ETFs include securities of a wide range of issuers both large and small, and there may be a

range of explanations for their aberrant behavior.

But we'll spend a moment now to look a little bit more closely at the experience of exchange traded funds. I'm going to turn it over to Jonathan to walk us through these slides. We are now on Slide 24.

MR. SOKOBIN: Thank you, Robert.

So 69 percent of the securities of the stocks that experienced a broken trade were ETFs. A large number of ETFs traded for a short period of time with very significant intraday price swings. Twenty-five percent had temporary price declines of more than 50 percent from their 2:00 p.m. market price.

Slide 24 is the same scatter plot that you saw earlier on Slide 12, but now only for the ETFs. There are a couple of features here that are worth noting. We see little evidence of the same pattern of increasing daily lows prior to the 2:33 -- excuse me -- 2:43 to 2:45 period. Instead there's a significant to the ETF sector that hits around 2:43, 2:45, and continues on all the way to 3:00 p.m.

Ninety-six percent of ETF shares that traded below the 2:40 price traded at prices above or within the ten percent level of their 2:40 p.m. price, but approximately 160 ETFs experienced lows for the day that were almost 100 percent lower than their May 5th close.

Although we don't show the chart, the analogous

chart for the trades of -- excuse me -- the high point of the

trades exclusively for the ETFs, we know that a number of those highs were also ETFs with one ETF experiencing a daily high of 275 percent above the May 5th close.

I'd ask you to turn to Slide 25. This slide, this figure shows different categories of ETFs that had broken trades and the proportion of ETFs in each category that experienced broken trades. The 227 ETFs with broken trades were in 838 ETFs. This chart only reflects ETFs and ETF categories for which there were broken trades.

There is no evidence that there is a pattern in ETFs, particularly around bond ETFs or ETFs that are focused in areas that are unrelated to the broad market, and in fact, there appears to be at least some weighting toward ETFs that invest in large cap stocks. But we haven't investigated that particularly closely yet, and it's one of the areas that we tend to look in.

If you'll turn to Slide 26, this is a sample trading period for an exchange traded fund. This is a large fund that is designed to match the total stock market exposure. This graph shows a period of 16 minutes, and I would point out that you can see between 2:45 and 2:46 is the point where the S&P 500 hit its low. That point, the spread between the national best bid and national best offer remains fairly tight, and as the stock experiences a lowering, a

25 downgrade in the price, that NBBO remains fairly tight.

Things look fairly normal until about between 2:45 and 2:46.

At that point the ETF appears to hit a shock where the bid drops from about $50 to about $30 and then returns quickly, and you can see by the mass of blue within the green and red bars that there is significant trading within that period.

The stock rebounds and recovers until a few, less than a second later, and then all of a sudden another shock hits, and the bid drops again. And at this point there is a transaction at a low price of 15 cents below the national best bid. And even as quickly again, as Gregg had said, as quickly as the bid price drops it returns, and the spread between the national best bid and national best offer return to a spread that seems to be normal for this security.

MR. COOK: Thanks, Jonathan.

Again, that's just one sample ETF, and there are many different patterns when we drill down on the other ETFs that had significant aberrations in their trading. We're going to be talking more later about what some of the theories might be for why ETFs behave this way.

Continuing with our observations of what happened, we wanted to talk a little bit about the liquidity issues, and starting with a discussion about the LRPs, or liquidity replenishment points, and the self-help issues that Steve

alluded to earlier. And I'm going to turn it over to Dave

Shillman to talk about this a little bit.

MR. SHILLMAN: Okay. Well, thanks, Robert.

I think I'd like, as Robert said, I'd like to talk about two unique aspects of the U.S. equity markets that we're examining to see whether or not they contributed to the price declines we saw on May 6th.

As many of you know, you know, there are many different places to trade stocks in the U.S. market. There are about ten or so exchanges, many times that more alternative trading systems, and many times more market makers, a multitude of venues. But our regulatory framework brings those multiple venues together through consolidated market data, through private linkages supported by fair access requirements and through a trade-through rule that generally prohibits trades at a worse price and the best displayed price.

And in the report, we look at whether certain practices that have developed in this national market system contributed to the events of May 6th and whether or not they exacerbated the price declines we saw.

The first of these are the New York Stock Exchange liquidity replenishment points, and today trading in the U.S. markets generally is automated and very fast, but the New York Stock Exchange has retained a volatility moderator for

its market known as the LRP where it will go slow when an

incoming order would result in an execution materially away, generally one to three percent, from the last sale. During this time, which can last from a second or less to several minutes, the New York Stock Exchange seeks to attract liquidity and then reopen in a way that moderates price volatility on its market.

When the New York Stock Exchange does this, however, the buy orders on the NYSE's book are unavailable to sellers wishing to trade immediately, and one of the things we're looking at is whether the unavailability of the buy orders on the New York Stock Exchange -- the New York Stock Exchange now overall is about 15 percent of the market -- whether that unavailability to those that wanted to execute immediately, you know, exacerbated the overall price decline or, alternatively, we're looking at whether the availability of a mechanism where a seller might get a better price, actually attracted sell pressure to the New York Stock Exchange to moderate volatility. So it's an open issue, but one we've teed up and are going to probe more deeply.

The second aspect of the national market that we're looking at is the self-help remedy, and basically, under Reg. NMS a market can exercise self-help and not comply with the trade-through rule if a market appears to be having systems problems, and as you can see from Slide 28, during the key

period on May 6th, four markets, NASDAQ, NASDAQ OMX BX, BATS

and NSX, exercise self-help against Arca, which has about 13 percent of the overall market share, for a period that lasted until towards the end of that half hour.

The facts remain in dispute as to whether that self-help exercise was legitimate or not, but the fact of the matter is during that period those who were using the routers provided by those four exchanges did not have access to the buy liquidity that may have been available on Arca.

So, again, we're looking at the extent to which self-help against Arca exacerbated the overall price decline, but again, the unavailability of Arca really would have been available for those who were using the routers of those exchanges and anyone else who may have been exercising self-help against Arca.

I think if you move to Slide 29, that gives a graphical example of how the NYSE's LRPs increased in the afternoon of May 6th, particularly during the critical period, and the blue bar on the left is the average number of stocks that had an LRP event lasting more than a second, and that average is based on activity during the course of 2010.

On the right in the red bar are the numbers that occurred on May 6th, and you can see that starting at around 1:00 the number of stocks impacted by LRPs started to

increase above the historical norms, with a significant

increase occurring around between 2:00 and 2:30, and then a huge jump during the, you know, core hot period from 2:30 to 3:00, where over 1,000 securities on NYSE were impacted by one or more LRPs, and then it gradually started to decline over, of course, the rest of the day.

So, again, this is a phenomenon where we're going to be looking at more deeply to determine whether or not it had detrimental impact on the volatility on May 6th.

MR. COOK: Thanks, David.

Just a note that these bars show the number of stocks impacted. They don't necessarily show how long they were impacted. It could have happened for a second or multiple seconds.

The other thing is that on the self-help declarations that were shown on the previous slide, just to note that those were in the equity markets. There are some conflicting reports about potential self-help claims in the options markets that we're going to continue to look into.

So continuing with our discussion of liquidity, if we move to Slide 30 we see a portrayal of the volume activity between 2:00 and 3:00 p.m., and you see the increase in trading that appears as the broad market experiences a disruption and then fails.

I would just note Jonathan is going to talk a

25 little bit more about liquidity, but there's an enormous

volume of trading on this day, 2.2 times the average daily trading volume in the fourth quarter of last year. So May 6th had the second highest daily volume for New York Stock Exchange listed stocks across all trading venues. The markets processed more than ten billion shares in New York Stock Exchange stocks alone, and May 6th had the highest daily volume on record for all NASDAQ listed stocks across all trading venues.

We'll discuss some of the consequences of this again further, but just to again flag that this high volume of trading result in billions of data elements, millions of trades and thousands of securities, all executed in milliseconds which all contributes to the complexity of trying to recreate what happened here.

Jonathan, do you want to talk some more about liquidity?

MR. SOKOBIN: Thank you, Robert.

If you'll turn to Slide 31, one of the important questions that the staff has been asked to address is whether electronic liquidity providers pulled back during the relevant time frame. The activities of these electronic liquidity providers are important because they've come to be a dominant type of liquidity provider in equity markets. Some estimates suggest that high frequency traders are 50 percent

of the total volume or higher. Individual firms can enter

large numbers of orders that can execute more than a million trades a day. In order to get a better sense of the role that these liquidity providers play, we asked the exchanges to identify the top ten liquidity providers on that exchange. For each of these top liquidity providers the exchanges reported the total number of shares provided or taken by each firm.

Liquidity provider for these purposes would provide executable quotes. A liquidity taker would lift or hit a resting bid by each firm.

What Slide 31 shows is the percentage of shares traded. The blue line is the number of shares traded. The green line is the percentage of that volume that the top ten liquidity providers accounted for, that they were providing. So that is the percentage of shares traded where the liquidity provider was being hit, was not initiating the trade.

The red line below it is for the same top ten, is the percentage of shares traded at any given time for which they were the liquidity taker. All right? So the difference between the two is the extent to which these liquidity providers were net providers of liquidity over the period 2:00 to 3:00 p.m.

What we see here is because the green line is above

the red line at all times, that the top ten liquidity

providers were, in fact, net liquidity providers across that entire hour. And, in fact, sort of a simple test looking at it with your eyes, not a formal statistical test, it seems to be that these providers effectively provided the net same number of shares throughout the hour. So even in the period where volume spikes, these providers continue to provide approximately the same proportion of share volume and take approximately the same proportion of share volume that they do throughout the hour.

But we have to be very cautious interpreting this figure. It only measures liquidity provision with respect to shares and not the prices at which the liquidity was provided. For instance, if most of the liquidity provided during this critical period was at stub quotes, we would not easily conclude that the liquidity providers were dampening the market volatility during the period.

Moreover, anecdotal evidence provided to us through interviews with market participants suggest that, in fact, some major liquidity providers ceased providing liquidity during this period. All of this says that this graph is only the beginning of the analysis that needs to be done and points us in the direction of one of the lines of inquiry that we'll be taking.

MR. COOK: Thanks, Jonathan.

Just to underscore that point, obviously these are

average numbers, and one of the things we're engaged in now is looking with more granularity at the activities of particular liquidity providers, to focus on whether certain firms who were normally liquidity providers became liquidity takers and at what volumes, and I think we'll see some interesting behavior there that we will point out to you as we get the analysis complete on that front.

So that is at a very high level some of the factual findings on the securities side, and we'll now turn it over to Steve and his colleagues to talk about the futures side.

MR. SHERROD: Okay. Thank you Good.

MR. ENGLE: Hello. Can I say hello, that I've just arrived? This is Rob Engle.

CO-CHAIR SCHAPIRO: Thank you very much. We will be starting on Slide 33 if you have the slide deck with you that we e-mailed over the weekend.

MR. ENGLE: I do have it. Thank you.

CO-CHAIR SCHAPIRO: Great.

MR. ENGLE: I will be ready in a second. Thank you.

MR. SHERROD: And, again, this is Steve Sherrod from the CFTC. We're on Slide 33.

CFTC staff conducted a preliminary analysis, and I want to emphasize like Robert did earlier this is our

preliminary analysis, and we reviewed the activity of the

futures markets to better understand the events that took place on May 6, 2010. The objective was to collect, analyze that preliminary evidence that we had that might be associated with possible causes of the events that occurred in futures markets, including, but not limited to, erroneous activities, such as fat finger errors, cyber attacks and significant system malfunctions.

Staff's preliminary review has not at this time found evidence of erroneous activities, no evidence of cyber attack, and likewise no evidence of significant system malfunctions. Rather, our preliminary findings suggest that a confluence of economic events, signals from various other markets, and a market increase in sell orders culminated in a significant liquidity dislocation in the E-mini S&P 500 futures contract. This liquidity dislocation was also preceded by some reduction in activity of certain liquidity providers.

I'll discuss our review of the role of liquidity and the return to a balance in trading coinciding with triggering of a pre-trade automated safety feature which the CME calls Globex stop logic functionality.

Turning to Slide 34, our review focused on trading he liquidity provision in the June 2010 E-mini S&P 500 futures contract. That single contract in the E-mini S&P 500

comprised 78.2 percent of the total trading volume in the 12

most actively traded broad based stock index futures contracts on May 6, 2010. An apparent imbalance of orders on the sell side, of course, resulted in falling prices.

At the bottom of the price decline, the depth of the order book declined, the price incline induced buyers we believe to enter the market, and the bottom of the price decline coincided with that CME Globex stock logic event.

Thirty-five.

Consistent with the broad market trends on May 6, 2010, trading volume in the E-mini S&P 500 futures was about 2.6 times greater than the average daily trading volume over the prior month. On May 6th, trading volume in the S&P E-mini contract was the fifth highest daily volume over the past five years.

Furthermore, the contract experienced a significantly higher level of trading during certain concentrated periods of the day. In addition to the overall high daily volume, intraday period by period trading volumes significantly exceeded the average trading volume for the same intraday periods observed over the prior month, especially between 2:00 p.m. and 3:30 p.m., with a spike in volume between 2:40 and 2:49 p.m.

As noted earlier this high volume was accompanied by high priced volatility. The daily price range in the

E-mini S&P 500 was 112-3/4 points. This represents the

second widest price range for the day over the past five years. The other four of the top five widest price ranges over these past five years occurred during the financial crisis in autumn of 2008, including the single largest daily price range, 115-1/2 points on October 28th, 2008.

Within the trading day, the widest price range between high and low prices calculated over ten minute intervals was 59-3/4 points. That occurred between 2:40 and 2:49 p.m., and that coincided with the spike in volume.

Turning to Slide 36, this is Figure 29 from the report. The blue bars represent trading volume for ten minute intervals on May 6th, and the red bars represent the average trading volume for the prior month. The volume spike clearly occurs in the 2:40 to 2:49 time period.

The tan vertical lines with bar stops, those represent the price range in the ten-minute intervals and, again, the graph shows the largest price range of 59-3/4 points during the same time interval as the price spike. According to the CME, over 250 Globex executing firms were active in routing E-mini S&P 500 futures contracts orders into Globex during the hour beginning at 2:00 p.m.

Globex executing firm is an entity that is directly connected into Globex. Non-Globex executing firms access that trading platform through a Globex executing firm.

Also during this hour of 2:00 p.m., Globex

transactions in the E-mini S&P 500 futures were recorded for 6,939 buy accounts, 6,873 sell accounts, 7,669 buy user IDs, and 7,564 sell user ID.

A buy account is a unique Globex account that executed one or more buy orders, and a buy user ID is a unique operator ID and also we refer to that as a Tag 50 ID. That identifies the party who entered the order on behalf of the account. A Tag 50 ID may be authorized to enter orders on behalf of multiple accounts, and as well a single account may have multiple authorized Tag 50 IDs.

So to reconstruct the activity is a bit of a challenge, to say the least. At 2:40 though the E-mini S&P 500 was trading at 1113. Five minutes later at 2:45, the E-mini had fallen another 57 points and bottomed at 1056. In the second of 2:45 and 27 seconds, the E-mini S&P dropped 12-3/4 points over a period of a half a second, 500 milliseconds on the sell of 1100 contracts by multiple market participants.

This sequence of trades caused the market to trade down to an intraday low of 1056. Further, in the bid-ask spread in the E-mini S&P 500 market widened to 6-1/2 points. That's 26 ticks. A tick is a quarter point.

This triggered the Globex stop logic, and that sent the E-mini into a reserve state at 2:45 and 28 seconds. The

reserve state held execution of any transactions for five

seconds. This hold allowed enough orders to flow into the market so that the next executed trade would be within six points of the last trade. At 2:45 and 33 seconds, the E-mini exited its stop logic reserve state. Upon exiting the reserve state, 1,753 contracts were traded at a price of 1056-3/4. The E-mini began to recover at that point, and in the single minute of 2:45 p.m volume in the E-mini spiked at 78,412 contracts.

So turning to Slide 37, I want to talk a little bit about the role of liquidity in the E-mini contract. The high volumes of trading along with sharp price movements suggest that liquidity at times actually may have dropped off. Liquidity reflects the ease with which certain amounts of an asset can be bought or sold without exerting a significant effect on price. Higher market liquidity can be interpreted as a greater collective willingness to execute orders at given prices.

While the notion of market liquidity cannot be directly observed, we can describe it, but we can't directly observe it. So market liquidity has multiple dimensions that are hard to capture by a single indicator. Staff at the CFTC reviewed multiple indicators of liquidity, including but not limited to the trading volume, the bid-offer spread and the depth.

With respect to these three indicators, high

liquidity may manifest itself as high trading volume. High volume may indicate the presence of a large number of buyers and sellers willing to transact in significant quantities. A narrow bid-offer spread may also be an indication of high liquidity as it reflects the existence of at least some buyers and sellers willing to transact at prices close to recent transaction prices.

And finally, the depth of the order book at successive quotes is an indication of high liquidity in that it reflects the ability to execute trades of size without having to bear large price concessions.

Turning to 38, so looking at that first indicator of liquidity trading volume, it did flash some signs of potentially high liquidity, and that is high trading volume. In the June 2010 E-mini S&P 500 futures contract during the period of 2:30 to 3:00, trading volume was about ten times the average daily volume for the same intraday period over the prior month. The high trading volume though was accompanied by significant volatility in the volume. This suggests to me a dislocation of market liquidity with high volume fluctuations possibly occurring at the same time that orders are executed deep into the limit order book, two indicators, flash signs of low liquidity, but at different times.

The bid-offer spread widened just prior to the stop

logic event, and that was at 2:45 and 28 seconds, and it briefly became variable, and the imbalance in the order book with less depth on the buy side was followed -- and that was at 2:30 -- it was followed by the decrease in market depth also at 2:45 at the time of the stop logic event. After that, there was a return to a relative balance between bids to buy and offers to sell.

Turning to Slide 39, it's Figure 30 in the report. In this figure the red line represents the volume, and the blue line represents price. The graph displays the level of volume in ten second intervals between 2:30 and 3:00 p.m. Between 2:30 and approximately 2:45, volume rose significantly while the prices fell, and between 2:45 and 3:00, volume fell and prices rose.

So transaction volume ranged from several hundred contracts per second to several thousand contracts per second.

Turning to Slide 40, it's Figure 31 from the report.

We also reviewed the behavior of the bid-offer spreads for the best and fifth best quotes in the 2:00 p.m. hour, and in particular, we focused on 2:43 to 2:48 in this figure. The bid-offer spread is a liquidity indicator based on the characteristics of a limit order book. Specifically,

the bid-offer spread is calculated as the difference between

the highest quoted price to buy and the lowest quoted price to sell.

This price difference is a measure of the cost paid by a buyer or seller who wishes to transact immediately, and similarly, the second, third, fourth, and fifth best bid and offer prices represent transaction costs to the buyer and seller willing to buy at increasingly lower prices and sell at increasingly higher prices.

So the red line here represents the spread between the best bid and offer, and the blue line represents the spread between the fifth best bid and the fifth best offer. The green line is the price of the E-mini contract.

Until approximately 2:45 p.m., both spreads were at their minimums, and that's typically what we would observe in this market of one tick in the inside bid-offer spread. At 2:45 and 28 seconds, the best bid-offer spread widened to six and a half points, and at this time the Globex stop logic triggered a five second reserve state.

Following the reserve state, the first and fifth best quote spreads increased to the period maximum of approximately two and three-quarter points and eight and a quarter points, respectively, and that's 11 ticks and 33 ticks. The left-hand scale here is in terms of ticks or one-quarter of one point.

25 By 2:50 and 40 seconds, both spreads declined to

about one and nine ticks. That's about a quarter point or two and a quarter points, respectively.

Turning to Slide 41, we reviewed the depth of the market by examining the sum of quantities of orders resting through the fifth best bid and offer in the limit order book. At 2:30 p.m. and continuing until shortly after 2:40 p.m., significant order imbalances existed between buy orders and sell orders with significantly more orders in the limit order book to sell than to buy.

In addition, in approximately 2:45 the depth of the limit order book declined dramatically. But the limit order book became approximately balanced, that is, orders to sell became approximately equal to orders to buy, which is a balanced state for a market to be in. While this relative balance remained through 3:00 p.m., there was notably less depth overall in the market.

Turning to Slide 42, I've mentioned the pre-trade automated safety feature on Globex, the stop logic functionality, and I'll review that in more detail now. This functionality was originally developed to address both markets and deferred contract months with low trading volume. The stop logic functionality is designed to stop a cascade of stop loss orders, which is essentially an event where one stop loss order triggers a series of other stop loss orders.

Under the CME rules, this functionality is

initiated when the last transaction price would have triggered a series of stop loss orders that, if they were to be executed, would have resulted in a cascade in prices outside a predetermined range called the no bust range. In this case it's six points in either direction generally from the last transaction price.

On May 6, 2010, that was the first day in 2010 on which the Globex system activated the stop logic functionality in any of the equity index futures markets. The stop loss functionality was activated in the S&P E-mini at 2:45 and 28 seconds.

In a bond being triggered, the E-mini S&P 500 was sent into what I've referred to as a reserve state. That reserve state is where the executions are held for five seconds. This hold allows orders to flow into the marketplace. If the system can execute within six points of the last trade, it executes. If the system cannot execute within that range, then the reserve state would have been extended for an additional five seconds.

At 2:45 and 33 seconds, the E-mini S&P 500 did execute at a price actually up three-quarters of a point and exited the stop logic reserve state, and trading continued throughout the remainder of the day.

I'll turn with Slide 43 to my colleague, Andrei, to

present some of our large trader analysis.

MR. KIRILENKO: So we're now on Slide 43, large trader analysis.

What we've done is that we've looked, in addition to looking to market-wide measures of liquidity, we have also looked at account by account trading activity trying to identify those particular patterns that we can observe in the way accounts have traded. Specifically, we looked at the activity in the ten largest accounts by net volume and by gross volume in order to see whether there were significant imbalances between large buyers and sellers in the market.

We split the critical half hour between 2:30 and 3:00 into two periods, between 2:30 and 2:45, right before the stop logic functionality kicked in, and 2:46 to 3:00. And the net volume was computed for each of the accounts in the E-mini S&P June 2010 futures contract.

We noticed that during the period from 2:30 to 2:45, the volume of trading by the top ten net sellers exceeded that of the net buyers by 20,660 contracts. During the period from 2:46 to 3:00, the volume of trading by top ten net sellers, exceeded that of net buyers by 18,364 contracts.

Thus, for both periods the trading of the largest net sellers exceeded that of the largest net buyers in the market. In this market, for every seller there is a buyer. So

what this statistic illustrates to you possibly is that the

largest net sellers are selling in the larger lots than the larger net ten buyers are buying. It doesn't mean that there are no buyers for the sellers; that the buyers are possibly buying in smaller sizes, which is consistent with the price concessions that they may be demanding.

Finally, we also noted that one trader out of the top ten trading accounts only entered orders to sell, which amounted to approximately nine percent of the volume of the trading during the period. That trader entered the market at around 2:32 p.m. and finished trading by around 2:51 p.m. Thus, the trader sold on the way down and continued to sell as the price level rose.

We now turn to page 44. We've also done a preliminary analysis of liquidity by examining trading activity of particular groups of traders in the market in order to ascertain how these particular groups behaved during the critical period between 2:30 and 3:00.

As we said before, liquidity is something that is not observable, and liquidity provision has to be appropriately defined as well. For the purposes of this analysis, we used the particular methodology to select significant liquidity providers.

What we've done is that we looked at the ten largest long by gross, by volume accounts and ten largest

short gross volume accounts, and from those we selected

accounts that were in both categories, that is, they were both the largest long and the largest short, but their net position during the period was no more than 150 contracts long or short. That is, they stayed relatively flat during this period. They traded a lot, but they didn't accumulate a net position on either side.

We defined this group of six trading accounts as liquidity providers. In the E-mini S&P 500 Globex electronic limit order market, there are no designated liquidity providers. That is, no trader has an obligation to provide bid and ask quotation on demand.

The six accounts that we classified as liquidity providers participated in about 50 percent of the volume of all transaction size between 2:30 and 2:34 p.m. For each transaction there are two sides, the buy side and the sell side, and so we've computed how many sides these liquidity providers have taken.

The remaining 4,573 accounts of the total of 4,579 transacting between 2:30 and 3:00 p.m. were defined as liquidity takers. We deliberately made our calculations robust and biased against us so that we could be reasonably sure of this preliminary review.

So turning now to Slide 45, it's showing the cumulative volume of transaction size of liquidity providers.

25 The blue line represents liquidity providers as we define

them, and the red line represents all of the other trading accounts during the one-half hour time period.

At approximately 2:35 p.m., the liquidity providers began limiting their trading activity as measured by volume of transaction size in comparison to liquidity takers. By 2:45:28, liquidity providers accounted for 46 percent of the volume of all transaction size and by 3:00 p.m., the liquidity providers account for 41 percent of the volume of all transaction size.

The decline in the participation of liquidity providers and executed volume of transactions can be interpreted as a partial withdrawal of liquidity by the six significant providers during the period of significant price movement.

I'm now going to turn to Rick Shilts, who is going to present the summary of findings from the CFTC side.

MR. SHILTS: Yes, and this would be Slide 46.

In summary, CFTC staff review of the futures markets on May 6th showed that a number of economic events and market developments led to a broad-based market desire for investors to lessen their exposure to risky assets. This translated into a downward movement in prices across financial markets in conjunction with significant trading volume.

At or on about 2:30 p.m., evidence suggests that a

liquidity dislocation may have occurred in the E-mini S&P 500 futures market. At this time, trading volume increased significantly and became highly variable at the time that prices began to plummet.

In addition, the electronic limit order book in the E-mini S&P 500 futures market exhibited a significant imbalance of sell orders and buy orders. In the backdrop of declining prices, this imbalance appears to have contributed to a sudden liquidity dislocation despite increased trading volume.

At approximately 2:45 p.m., several sell orders would have been executed deep into the limit order book which coincided with significant loss of depth triggering the stop loss functionality. Activation of the stop logic functionality on May 6, 2010, initiated a five second pause in trading in the E-mini S&P 500 futures contract. After the five second pause, the limit order book became more balanced, and the price of the E-mini S&P 500 futures contract recovered.

I'll now turn it back to Robert.

MR. COOK: Thanks, Rick.

That concludes the initial portion of our presentation as to the initial findings, and we'd be happy to take questions before we move on to lines of further inquiry

and research.

Thank you.

CO-CHAIR SCHAPIRO: Thank you, Robert, and thank you to all of you for an excellent presentation.

And I would open it up to Committee members for reactions or questions.

MR. KETCHUM: Thank all the staff. It was extremely well done and charts very revealing.

A few questions on the equity side just to try to understand a little bit better. First, in particular, with respect to the two stocks and one ETF vis-a-vis the trading with regard to both bid-ask spreads and the number of trades outside those bid-ask spreads, I think it would be interesting. It appears from those three stocks that none of the -- first, there are very few trades outside bid-ask spreads on the down side, and none of them seem to track the Arca self-help moments per Dave Shillman's thing.

It would be interesting to see across stocks how many trades outside of the bid and offer, the NBBO track Arca self-help moments, if indeed that self-help thing resulted in avoiding liquidity in the Arca book. You would assume there were trade-throughs.

The other one that I'd appreciate your maybe taking a look at is the LRP information obviously is very interesting to understand the results during those times. It

would be good to do, again, similarly to take a look at at

least in a few stocks where there was significant volatility LRP trade-throughs and the breadth and dimension of the trades that occurred outside of the New York indications during the LRPs.

The other thing that occurs to me is that on the liquidity provider chart on page 31, I think, Jonathan, your point. If you're really looking at the logic and the implication of different types of or the absence of market maker obligations, to your point, what you're looking at is whether trading occurred on a relatively slanted basis at or around prices around there. So I think it would be good to look not just at whether liquidity was provided, but how much of that liquidity, say, was provided within 20 percent of the trading price at the beginning of the period or, again, looking at the slope from the liquidity provider standpoint. Were they providing anything close, to use old terms, market continuity during that time or were they sitting down at the bottom and simply trading? And it would be great to sort of get a feel for that kind of thing.

And the last suggestion would be, while some of these charts do this very well, there are obviously moments on a stock-by-stock basis, as well as the E-mini, and the E-mini ones show this, I think, particularly well, where I'll call flex trading moments, the moments when the thing tanks,

and the second or in between second when that pressure is in

there, sort of looking at liquidity providers and whether they were taking or providing liquidity at those moments when the stock turned or when the stock tanked also would be helpful in sort of identifying what really was the reaction of the major quote liquidity providers during the time.

MR. BRENNAN: I want to reiterate Rick's thanks for the extraordinary work, and it looks like a career's worth of work in a couple of weeks. It's really outstanding.

This may not surprise you. My eye was drawn to the ETF side of things, and a couple of questions. One is soft, I think, and I don't know whether you have answers to it anecdotally, which is whether in the ETF creation process, did you have any sense for whether it was an inability or an unwillingness to participate in that market when the bids fell away. Because this is a more manual process in many ways. It's much closer to the old specialist process today.

And so that's a question that I think would be interesting to know more about, and then a related question, thinking about the E-mini and how important are -- and it may not be important at all -- but how important are the futures markets in the hedging in the creation exercise. Is that part of this?

You know, in your summary points, two of the six related to the ETF business, and it's interesting and it's

relatively new, still relatively manual. It would be

interesting to know answers to both of those either statistically or probably more anecdotally.

Jonathan, you look like you may have those answers. I don't know whether you're supposed to answer questions or we're just supposed to ask them.

CO-CHAIR SCHAPIRO: Go right ahead.

MR. SOKOBIN: Thank you.

I guess where we don't have answers yet, I think we'll pass, but where we do, we'd like to provide them.

We talked to some participants in the ETF market. They told us by the end of the day things were sort of back to normal, and that there was, in fact, no particular issues with end of day pricing. But we did ask and did receive for some fund families information on creation and redemptions. We have only very limited information, but the information that we have to date suggests that there was no particular difference around May 6th for funds, in creation redemption, for funds that had broken trades and ones that did not.

CO-CHAIR GENSLER: Can I just ask? Jack might know this better, but, Jonathan, are creations and redemptions done at the end of the day or are they done, you know, down to this nanosecond sort of time frame?

MR. SOKOBIN: Our understanding is that creations and redemptions are only done at the end of the day.

MR. COOK: I mean, just to follow up on that one

point, it's an excellent question that we intend to look into further because even if you set aside the creation and redemption, obviously the price of the ETF is being driven by the trading throughout the day and the ability of market makers in ETFs, whether formal market makers or people who are substantial liquidity providers in ETFs, to hedge in the underlying securities would obviously be something we should be looking at when we're thinking about the effect of prices of the ETFs themselves.

So that linkage between trading or the ability with certainty to execute a hedge in the underlying stocks versus buying or selling the ETF is something that we really need to explore because that might be where some of the breakdown is occurring in the pricing of the ETFs.

MR. BRENNAN: It does feel that way because it encompasses many of the macro issues that you're looking at in some ways. So that's great, Robert. Thank you.

MS. PHILLIPS: Thank you.

And I also want to thank all of the staff for this very complete report. It's very impressive. You obviously have been crunching lots of numbers and printing out lots of graphs, and it's very helpful.

I have a few questions, and some of them I think you'll be able to answer and some may lead to maybe some

25 additional analysis.

First of all, I'm not as familiar with this stub quote stuff, and I guess first of all I'd like to know what's the theory behind having stub quotes at all.

MR. COOK: It's in some ways a vestige of a time when market makers were the central liquidity providers and there was a more formalized role for market makers in more concentrated markets. But now that we have dispersed markets, many different trading venues, many of them don't have obligations to even have market makers on some trading venues.

However, there continues to exist in the rules this concept of a market maker and being a market maker can provide you with certain regulatory advantages, and so some firms may try to opt into those advantages by claiming to be market makers, and whether or not they're really providing an effective market, which I think is a point Rick was also raising, is the key question here, and whether we've now observed a situation where in order to avail themselves of a regulatory status they're providing quotes that actually undermine the integrity of the markets rather than promote them, I think, is a very important policy question we need to be looking into.

CO-CHAIR SCHAPIRO: It really comes, doesn't it, Robert, from the obligation to make a two-sided market and to

have quotes on both sides, and if you really actually don't

want to at the end of the day provide liquidity, you just widen out that spread dramatically, and that's how you end up with a penny to $100,000, for example, as potential quotes, but they're meaningless in some ways.

MR. COOK: Right. You would expect that most of the time you're putting up quotes that you don't really expect to be executed because you aren't able to provide liquidity or you're not willing to provide it, and normally it doesn't matter because no one ever or the order book never disappears before that quote would be hit.

But obviously, this was an instance where the order book fell away and people went right down to the stub quote.

MS. PHILLIPS: Okay. If you didn't have those sort of nominal quotes, stub quotes, there just wouldn't be the trades; is that right? Trading would have stopped?

MR. COOK: Yeah, I believe that's right. There wouldn't have been a quote to execute against.

MS. PHILLIPS: Yeah.

MR. COOK: So who's executing against them, it's likely market orders coming in saying, you know, in order to execute at whatever the market is, which is another issue that we're going to be looking at, is whether the order types sort of combine to contribute to this problem, but, yes, it would have been -- if there was no quote there, there would

have been no execution.

MS. PHILLIPS: During the day, I guess I'm wondering were there interday margin calls and did the money move as it was supposed to and were there -- and even at the end of the day for the margin calls, did everything settle out as it was supposed to?

I guess I'm sort of wondering if you're following the money where were the problems.

MR. SHERROD: Well, in the futures markets with respect to the trading that took place on May 6th, at the CME and ICE futures U.S., the clearing and settlement process worked effectively and without incident, and the CME collected and paid its clearing members in a timely manner, and ICE Clear U.S. also performed well with its clearing members. With the end of day mark to mark calculations there weren't any particular difficulties with those end of day payments.

MR. COOK: And then on the securities side, yes, we followed closely working with the clearing agencies. There weren't any significant issues there in terms of settlement of these trades, and obviously at the customer level the clearing firms, there were a number of margin calls that needed to be made, but we're not aware of any kind of significant issues coming out. Obviously, there are, you know, case-by-case; individual customers may have had issues,

but there wasn't a sort of systemic type issue coming out of

that.

CO-CHAIR GENSLER: I would add it's not that we haven't heard from some market participants as to whether any of the clearing computers may have had some nanosecond slowdowns and so forth, but in terms of the raw dollars is, I think, what Mr. Sherrod was talking about.

MS. PHILLIPS: So none of the firms then got into capital problems? I mean, because this is a lot of money moving around, you know, and sizable prices.

MR. COOK: We're not aware of any firm that had, you know, a capital problem to the point of, you know, being able to or needing to report it solely as a result of this, but there are a lot of firms out there, and I'm not sure we've been able to track through each and every one. We've been focusing, obviously, on the bigger ones and working our way down. So we might come back to you and tell you that there were some that got a little into the red depending on their trading activity, but so far we haven't identified any firms that would rise to the level of significance to raise for you.

MS. PHILLIPS: Okay. And this is something I guess I don't understand. If you hit -- and this is on the securities side -- if you hit one of these speed bumps with an individual stock and there's a slowdown in trading, how

25 does this then affect the indexes? And does that cause

problems throughout the markets?

MR. COOK: Well, the trading is still occurring in the security, but it's a slowdown on a particular exchange in the case of an LRP or it's a decision by one exchange not to route to another in the case of self-help. So the trading is actually still occurring during that time. Obviously the trades that would be occurring would be in some cases were at prices that were significantly lower, but also each index has its own rules about how to calculate its index pricing and often take into account things such as a trading halt or other situations with respect to a particular security, and that could all -- so you know, there are some ways in which index providers deal with these kind of events.

But just back to the point, the trading didn't halt in a security system.

CO-CHAIR SCHAPIRO: I see.

MR. COOK: It halted in some cases, in the particular venue -- a pause would be a better way to put it -- in the particular venue for a moment.

MR. BRENNAN: I just want to follow up on that because in the report I wasn't clear on that either. So could the same stock have been being executed in New York at a different price than it was executed in one of the self-help declaration venues? Simultaneous? I'm just not

25 familiar enough with it.

MR. SHILLMAN: Basically, when New York goes into an LRP, it will pause for, you know, a second or two or up to a few minutes. During that time the other markets will continue to trade that security, and then New York will reopen following the LRP at a print, and that print is then subject to, you know, the trade-through rule, and that would have to be brought into the national market system and the prices established.

MR. BRENNAN: So there's no ability to arbit beyond a second or something else exchange to exchange.

MR. SHILLMAN: Yeah, there isn't an ability to arbit because basically New York has shut down in trading for a few seconds or a minute and then comes back up.

MR. COOK: But I think is a crucial point and also raises the further research question that Rick was identifying, which is to what extent does that correlate with actual price declines in a particular security, right? Because there were a lot of broken trades in securities that aren't listed on New York. So New York only trades New York listed securities. So its LRPs only affected New York listed securities.

Many, as you saw from the presentation, there are many trades that were broken in other securities that could not possibly have been affected by the LRP because those

25 securities never trade on New York. So we have to match up

both in terms of volume and timing the implications of an LRP or a self-help declaration what it would actually mean for liquidity in the other trading venues.

CO-CHAIR GENSLER: Robert, if you answer that question also on self-helps is there an opportunity to trade away from a market if NYSE Arca had these self-helps?

MR. COOK: Right. So if, for example, NASDAQ declares self-help against Arca, what that means is that NASDAQ will not route orders to Arca even if Arca has a better priced order, but NASDAQ can still execute orders on NASDAQ. It can still route orders to other exchanges.

Moreover, other routers of orders can still go to Arca. It only affects NASDAQ's routing of orders to Arca. Those who are on Arca can also choose to send their orders to another venue as well. So with the self-help the question is how much resting liquidity was there at the exchange, at Arca in this case, that got trapped there or was it still available effectively because people just didn't go through NASDAQ. They went directly to Arca, which is quite common. The more sophisticated traders wouldn't necessarily rely on one exchange to route to another. If they thought there were better prices at that other change, they'd go there directly.

I'll ask Dave if he wants to amplify a little more.

MR. SHILLMAN: You know, I think that's right, and

the key question I think you started to mention is whether or

not that liquidity in Arca and much liquidity today, particularly on the exchanges, is made through electronic market makers who are rapidly in and out of venues. You know, if, in fact, Arca appeared to have system problems, they'd then just move their quotes elsewhere. Did that liquidity really stick on Arca?

MS. BORN: Could you expand a little bit also on the broken trades? I guess I was a little taken aback. That seemed like a lot of broken trades to me, and were they mostly these ones at the stub quotes or is this routinely -- and have there been complaints about it?

CO-CHAIR SCHAPIRO: I can answer the last part. Yes.

(Laughter.)

MS. BORN: Oh, I'll bet.

MR. COOK: Yes, I think if you go back, if we were to go back to the graphs, many of the quotes, many of the broken trades were at the stub quotes, at the lowest, if you define that as sort of in the 90 percent to 100 percent range of loss. Broken trades happen all the time because of pricing irregularities that can happen on exchanges, and the process is designed to be one that protects parties from a situation where a trade for whatever reason gets entered into at prices that no one would deem reasonable given where the

rest of the market is at that time.

Obviously in this case there was a large number, and the exchanges convened after the market closed to try to determine where to draw the line, and then it was through those discussions that they drew the line at the 60 percent point.

There's a lot of arguments on either side of that question. If you break trades at a lower point, you may be discouraging liquidity providers from coming in and offering buy side liquidity because their trades will just be broken.

On the other hand, the lower you set the threshold if it was 70 or 80, you know, you're keeping on the books trades that are really at prices well below the market, and I think one of the things that Chairman Schapiro has asked the exchanges to do is to come up with a process for determining at what level trades would be broken if this sort of event were to happen in the future, where the key is to have predictability consistency and transparency around the process so that when you're trading today you have some assurance as to what levels you could enter into trades and have them not broken versus having them broken and rather than have it be the result of an ad hoc process.

I think just one thing to point out about this is that the reason we're focusing on broken trades today and as a result of this event was precisely your point, that there

are so many of them. Broken trades, the process has worked,

you know, quote, unquote, worked to some extent because it really has only hit individual securities, and in some ways that's what it was designed to do, was to get the one off unique situation where there was something peculiar about the particular stock that cause a price aberration.

What this event showed us was that there was a shock of some kind to the system and it led to the indices bouncing, and then some stocks just had, you know, as a result of that presumably some very significant outliers in terms of trading, and it was the volume of that that has caused us all to focus on broken trades in the way that we haven't had occasion to before.

MR. SHILLMAN: One thing I'll add is that the stock by stock circuit breakers that were proposed by the exchanges last week should greatly reduce, once they're implemented, the number the number of broken trades.

MS. PHILLIPS: Were you -- I guess both agencies -- reasonably satisfied that the market seemed fully integrated across both the derivatives and the underlying securities throughout this entire day or hour?

MR. SHERROD: I think that's exactly an area that we want to work on carefully. Robert and I have talked about our areas for further review, and we want to carefully and thoughtfully analyze, do a careful side-by-side review of to

500 stocks in the S&P versus the S&P 500 E-mini contract, but

to this point we have not completed that.

MR. COOK: I would agree with that, and I would just add that if you go back in your mind to the very first slide where we had the plunge and then recovery and those various indices --

MS. PHILLIPS: Yes, right.

MR. COOK: -- which included both the futures and the securities, in some respects you could say, yes, they were very integrated, but that also highlights the regulatory concern that a shock in one market or something that's happening in one market can also trigger events in another market or at least they move together, and it means all the more -- it just highlights the need all the more for close integration of the way we think about how the markets work together, and that if there's something going on in the securities side that could affect the futures and the futures that could affect the securities, we need to coordinate our regulatory approach.

And this is something that we're talking about, for example, in terms of some of the stock-by-stock type circuit breakers and any other types of regulatory initiatives that we might undertake.

CO-CHAIR SCHAPIRO: Thank you. That's very helpful.

Brooksley.

MS. BORN: Maybe I'll start with just a follow-up on the self-help mechanism that NASDAQ activated. How long does that continue, and what's the mechanism for its discontinuation?

MR. SHILLMAN: Well, the way that's designed to work, when one market detects that another market is not responding within a second and does that more than once, then it is entitled upon giving notice to that other market that it's exercising self-help to route away from the market and not go to it. And what's supposed to occur at that point is there should be a conversation between the market exercising self-help and the market that is purported to be slow to figure out if there's a problem, and if so, if there's a problem, that market is supposed to market its quote as slow so no one has to go to it or, if there's not a problem or it has been solved, the market that's exercising self-help will then begin routing to it.

So it's a process that is designed to give an immediate recourse to a marketplace that detects another market as slow, but then there's a mechanism to basically, you know, find out what the truth is, and as soon as that's determined, then basically once that market comes up again and stops having systems problems, routing will then occur.

MS. BORN: And what happened on May 6th?

MR. SHILLMAN: Well, on May 6th, again, you know,

there's some disagreement as to whether or not the self-help exercise was legitimate or not. There are two sides to this story, but you saw from the chart there were four markets that exercised self-help against Arca during the relevant period, and towards the end of that hour, right before three and a little after three, they all began routing to Arca again.

So whatever the issue was was resolved within a period of, you know, ten to 15 minutes.

MR. COOK: It might be fair to say that self-help is something that does occur from time to time.

MR. SHILLMAN: It's exercised with some regularity, on average about once a week.

MS. BORN: Let me also ask about whether and how carefully you all are looking at the market quotes, the stop loss quotes, and the stub quotes as causative factors here, I mean, without kind of, quotes, without limit on it presumably the market would have not dropped and had executions at such a low level and probably there wouldn't have been the enormously high quotes, high executions without the stub quotes, too.

Is there consideration being given to requiring that orders have limits? And what are the issues involved with that?

MR. COOK: Yes, we are taking a look at that. I

mean, I think it would be -- at least preliminarily we're not thinking of them as causative factors in the sense of having caused the overall broad index declines in a very dramatic way, but they are certainly exacerbating factors in terms of the performance of particular securities.

So, yes, one of the key things we need to think about is to the extent there were market orders or stop loss market orders which are essentially orders that are pending until you hit the stop level and then they become market orders, and I think Steve had referred to that as sort of potential contributing to a cascade of orders that could push the price down; that is something we're very focused on. There are a number of competing regulatory issues here. Market orders are widely used and normally don't create problems. They give the investor the certainty of execution so they know that when they put in a order to sell, it will sell. But what they're assuming when they do that is that it will sell at a price reasonably related to what they think of as the current price and in an orderly market. And so there are a range of different approaches we can think about here. One is better education for investors about what it means to have a market order, the consequences of that, particularly if events occur like this again.

But there are also other types of approaches that

we can think about in terms of both encouraging greater use

of limit orders or other types of filters that might be put in place by exchanges or other trading venues that would collar orders around a certain price relative to the market.

Those are very significant changes that affect the way people behave in their trading activities, and so I think we want to approach that very carefully, but we clearly need to look at it very closely.

CO-CHAIR SCHAPIRO: Could I follow up on that, Robert? To the extent we were able or the markets proposed eliminating the use of stub quotes, does that change how you think about things like stop loss orders if stub quotes don't exist in the marketplace?

MR. COOK: Well, I think it might. I mean, I think all of these are interrelated just as the single stock circuit breaker will change the relative significance of certain other potential exacerbating factors. Yes, so if we were to get -- I think part of the challenge here will be to identify which are the changes that we could make most effectively without causing disruption in the markets and then once those happen, are there any other changes that would have to happen?

And frankly, we still need to evaluate which are the changes that would be appropriate to make in the first place. I think it's very early in the analysis of this, but

yes if you did something with stub quotes that might well

affect the need to do something with market orders.

MR. SHILLMAN: And certainly the outrageous prices we saw May 6th were very likely the result of stub quotes, and as we talked to market participants, we found virtually no defenders of stub quotes, and to the extent those are eliminated one way or the other, it could certainly reduce the need for action on the market order side for the outrageous prices, but I think it may still be worth thinking about whether investors should be aware they could get a bad price, albeit not a stub quote, unless they had better controls or some sort of limit price.

MS. BORN: I think Steve Sherrod wanted to add something.

MR. SHERROD: I just wanted to talk about the pre-trade automated safety features that exist on both CME and ICE. Those types of features extend to both volume, to have a volume restriction, to avoid a fat finger error, but they also extend to price. So there's a no bust range or a range of reasonability where orders must be entered within that range, and even a market order that would be entered as a market protected order to be executed at a price no more than so many points from the last transaction or the prevailing bid and offer prices.

So there are a range of these features already

25 built in on the futures side that keep the futures market.

It doesn't stop trades from executing rapidly and bringing the price up or down, but it does stop the price from spiking down to a penny or up to 100,000.

MR. COOK: I'd just note there are some securities markets that have similar logic in their order processing systems. It's just not uniform across all the markets. It's an area where each market has been able to offer to its participants a range of options. But because we have multiple markets with multiple different trading practices, some actually have implemented this type of logic. In fact, some of those markets had lower instances of broken trades, which may well be the result of that.

MS. BORN: I also just wanted to address the futures markets in other broad-based securities indices. I know that the E-mini, particularly the June 2010 contract, was a very big percentage of the overall contracts in broad-based securities index futures, but I wondered whether or not an investigation of what went on in the other index futures is ongoing, number one.

And also, whether there has been an analysis of individual stock futures and how they behave compared to the behavior of some of the aberrational individual securities trading.

MR. SHERROD: We have begun looking into the other

markets. In particular, we've received a report and

discussed trading in the Russell 2000. It is ongoing. As you mentioned, most of the trading, about 78 percent of all the trading is in the E-mini, and we focused on that first, but we are looking into the others.

With respect to the second question, my recollection of single stock futures trading volume for the day was about 12,000 contracts. So it wasn't that terribly significant and it's lower in our priority list.

MS. BORN: Thank you.

CO-CHAIR SCHAPIRO: Are any of our phone participants interested in comments or questions?

MR. ENGLE: Yes, I would like to ask a question. This is Rob Engle.

CO-CHAIR SCHAPIRO: Please go right ahead.

MR. ENGLE: I was very interested in the graph on Slide 45 that showed the -- one of the slides that showed a reduction in liquidity supply. I wondered whether this is an extraordinary amount of reduction or whether this happens typically when the market has high volatility.

MR. KIRILENKO: Thank you very much, Professor. This is Andrei Kirilenko from the CFTC.

I think this is another issue that we'd like to investigate further. At this point we're able to analyze or this very particular period of time but we'd like to go back

and see what happened before 2:30, what happened after 3:00,

what happened on other days and investigate further how liquidity is typically provided and then contrast it with what happened specifically on this day.

MR. ENGLE: Right. Because we would anticipate that as volatility goes up, you would see reduction of liquidity supply in many cases.

MR. KIRILENKO: We've, again, focused on the six largest. It would also be interesting to drill down to what are the -- who sort of stepped in and provided liquidity during that time, how it was provided. The information, the data that we have is very granular. We could look at whether the quote was sitting there or whether it was picked off. We could look further into this and see, sort of drill down into more details on how the liquidity provision changes as the broad market experiences periods of increased and volatile volume and volatile prices.

MR. ENGLE: And is there a similar analysis that you are doing for the securities? For the equities?

MR. SOKOBIN: Yes. We will be doing a similar analysis. The slide that we showed on liquidity takers or providers was just the first step in putting together the order books and trying to understand where liquidity was being provided and where it was being taken.

MR. ENGLE: Okay. Thank you.

CO-CHAIR SCHAPIRO: Jonathan, what was that slide

number just for Professor Engle's -- he joined us a little bit late.

MR. SOKOBIN: That was Slide 31.

CO-CHAIR SCHAPIRO: Slide 31. Okay.

MS. O'HARA: Hi. This is Maureen O'Hara. I wonder if I could ask a question.

CO-CHAIR SCHAPIRO: Of course.

MS. O'HARA: My question actually builds on something you've just been speaking about, which is the construction of the order book. I wondered if anyone has looked yet at cancellations and how those contributed to the hollowing out of the order book as the, you know, sort of problems became apparent. That's sort of question number one.

And then question number two is just a technical question maybe you could help me with. I know that a lot of the exchanges sell their own data feeds to, well, HF firms in particular, but to other firms as well, and I wondered to what extent are the proprietary data feeds of the exchanges -- how much out of sync were they with the regular consolidated data feed?

That is, I'm trying to understand whether, in fact, the problems affected all of the information that everyone in the market was getting or if it was affecting some people

differentially.

MR. BERMAN: Those are great questions, and they're questions that we definitely would love to know the answer to. On the first part about the cancellation of the orders themselves, so far we have a full slide on this that we'll explain later in the presentation. The data that we've received has been on the top of the order book for each of the individual exchanges. The cancellation information that we received has been on broken trades, trades that were actually canceled later.

We have not yet analyzed the depth of the order book to see to the extent that orders were actually placed and then they were later withdrawn, which we know is a common technique in many types of proprietary trading strategies and algorithmic strategies so that's an area of keen investigation.

As we'll get into, the volume of data is enormous. We're dealing with literally tens and tens of billions of individual data elements to try to reconstruct some of those order books.

We have also heard, to the second part of your question, on the feeds themselves. The data that we receive is quite precise. It has eight significant digits so it goes down to the millisecond level, but what we have heard directly from the exchanges and from those who have sent us

the information, just because something says it was traded or

a bid was placed at 3.567 milliseconds does not mean that it came before the 3.568.

There are latencies in the different feeds. The time that it takes an order to transmit from one to another, clocks get out of sequence. So that's one of the areas that we need to investigate. To try to minimize that, we've grouped everything by the second. So if you recall some of the charts where we see apparent trade-throughs, some of those might be artifacts of saying, well, that actually happened the second before and that just happened to be on the one second boundary, but it is an area that we do need to discover a lot more information on.

MR. KIRILENKO: On the E-mini side, Professor O'Hara, we are fortunate that the trading occurs in one trading venue and all orders are matched in one by matching algorithm. So we are able to reconstruct the limit order book, and we are very keenly looking at cancellations when they happen, who submitted them, and how they were done, as well as other more granular information on the limit order book side.

MS. O'HARA: Well, thank you.

CO-CHAIR SCHAPIRO: Are there other questions?

(No response.)

CO-CHAIR SCHAPIRO: Okay. With that then, I guess

I'll turn it back to Robert and Steve to talk about

additional data requirements and the next steps we're going to take.

MR. COOK: Thank you.

So we'll just discuss briefly some of the further analysis, and we've touched on a lot of this already in the Q&A. So this will be familiar territory, but why don't we begin with Slide 48 on the securities side?

And I'll turn this over to Gregg to just sort of describe what this slide is about.

MR. BERMAN: Thanks.

On Slide 48, what we've done is try to present a bit of a framework for how we're going to think about both the next steps and the analyses going forward. As you can see from the questions today from all the members, there are many different directions and many different lines of inquiry.

So what we tried to do was put them together in a framework so that we can look for similar lines of inquiry. Where we start is at the beginning of the day when there were clearly some external shocks in the market or signals. Whether or not they were real or whether or not they were perceived remains to be seen, but for certain it was a jittery day in the stock market.

Different market participants behaved differently

under these circumstances. Here we list four: market

makers, retail investors, institutional investors, algorithm of traders, each with their own decision making process and, most importantly, each with their own time horizon for making those decisions.

The bottom part of the chart shows that once those decisions are made, they are made under different venues, and here we list three different markets just to give an example. Those markets represent different categories. So one can think about the market as being different exchanges. You have Exchange 1, Exchange 2, and Exchange 3, and one exchange will be affected by what happens on the other, whether it be through self-help or through LRPs.

You can also think about the markets as being different venues for how to think about the trading themselves, derivatives markets, futures markets, cash markets, et cetera.

When you have rebalancing, what happens in the cash markets happens in the futures markets; what happens in the futures markets happens in the derivative markets, and it becomes a bit of a circle. So there's a lot of intermarket feedback.

Even the order types themselves have a bit of a feedback as we've heard about today where if the market goes down and you invoke a stop order, that can drive the market

down even further and you have a bit of a cascade.

So we're thinking about all of these problems within the framework that's listed here, and the important thing is when we start to think about how these market changes and the propagation of market signals creates a feedback loop that then exacerbates the situation even further.

When we think about feedback, we think about folks changing their decision based on information that then changes their decision again and again, and so forth. Because of the time scales involved, it is unlikely that investors are making real time decisions or even that traders are making real time decision by watching the prices. These things happened at the second or the sub-second level.

So to the extent that decisions were being triggered by changes in prices, this most likely happened at the algorithmic side of things where things can happen much faster, or they happened in a pre-programmed way through stop loss orders, market orders, et cetera, that were triggered automatically. But we're looking less at the instances where folks have made their own trading decisions based on watching a millisecond by millisecond feed.

MR. COOK: Thanks, Gregg.

So within that overall context, we've identified on the next Slide 49, some general themes that pick up on some

of the discussion we've been having and areas that we want to

continue to explore at a very high level.

You know we in the first instance plan to examine further the types of activities that might suddenly generate enormous demand for liquidity to buy. We spoke earlier about the linkages between the futures markets and lots of discussion today about the E-mini on the S&P 500, and linkages between those and the cash markets and the extent to which changes in one may have driven the other, which is particularly important given the price discovery interplays that are going on. That's going to be a continuing area of focus.

We'll also be looking at whether there are other types of trading behavior that could have contributed in varying degrees to the downward price pressure. For example, to what extent were firms employing directional strategies that were triggered by signals that attempt to exploit short-term price movements? This is a type of trading activity that the Commission has raised in connection with its concept release on equity market structure and one that we'd like to understand more in terms of the events of May 6th.

Short selling is also another area we'll be looking at as we talked about before, and while the overall short selling on May 6th for the day doesn't seem to account for a

disproportionate percentage of trading volume, we need to

examine further what was really going on in the 20 minute period, and as you will recall from the slides on the stub quotes, there were a lot of short selling trades that came up at that level.

So these are some of the broader types of issues we're going to be looking at to try to isolate what some of the triggers, or that may or may not be the right word, but what some of the key instigators were of the overall decline in prices.

We'll also be looking much further into what happened to liquidity, studying particularly the activities of market participants who normally provide liquidity in the marketplace. As we've said, based on anecdotal evidence, there's some suggestion that a large number of trades executed against stub quotes -- sorry -- based on anecdotal evidence and the stub quote trades, it would appear that some professional liquidity providers temporarily didn't participate in the market on the buy side, and we need to understand how these firms are acting.

They may have been acting appropriately under current rules, but we need to look at the data and determine whether they withdrew from the market, to what extent, and why, and as we've also been discussing, we need to look at issues of potential trap liquidity due to different trading

rules or conventions across different market venues as we've

been talking in terms of LRPs and the exercise of self-help, whether that was appropriate under the circumstances or not.

There's also some emerging evidence that large internalizers may have ceased providing executions. We've been talking about the exchanges as the key execution venues, but if you go back for a second to the previous slide when we were looking at different market types, you should also be thinking of large internalizers of orders as a way, another type of market, a very significant market out there for the execution of orders and their activities or their changes in their behavior during this time could well have had a significant impact on the way that orders, particularly retail orders, were affected during this time.

A third area of further inquiry will be the role that different order types play. I think we've talked a lot about this already.

A fourth will be understanding the experience of ETFs. We've talked about the need to look at the behavior of market makers in ETFs and whether their ability to hedge in the underlying securities may have affected their willingness to trade the ETFs and at what prices. We're going to be looking at the creation of redemption process and to see what evidence we can find of any variation in creation and redemption activity that might be related to these events.

We also need to examine further whether the use of

ETFs by institutional investors, who often use ETFs to quickly acquire broad market exposure, whether that led to any selling pressure on the ETFs as the market began to decline, and of course, we'll also be looking at whether the exercise of self-help against Arca was a factor in the experience of ETFs because many ETFs are listed on the Arca market.

And then finally, we'll we keeping our investigation open to considering other contributing factors that may be identified to us as we continue our research and analysis. For example, there were some questions today about the role of the kind of systems and how they work together, and whether there was any latencies in the messaging traffic that may have contributed to this in one way or another would be something we want to understand both for purposes of figuring out to what extent that contributed to what we observe, but also for purposes of forming policy responses.

And just finally we'd like to spend a minute. We've been alluding for a while to the issues of data and just want to describe once again sort of what the context is in which we're trying to gather data.

And I'm going to turn this over to Gregg to describe. This is Slide 51 in your materials.

MR. BERMAN: So I thought we'd just take a minute

to trace the history of a trade and to get an idea of the

type of data that we need in order to reconstruct the events of May 6th and the data that we've analyzed so far.

So the trades that are indicated in blue at the center of the chart, these are the trades that do happen on a millisecond by millisecond level. They come across the ticker; they come across the consolidated tape, and we've had access to them. They generally come from a single source of information that is supported by the New York Stock Exchange called TAQ: trades and quotes, and we've spent most of our time analyzing the data in that database.

In addition, there are two other databases that are part of that same suite of offerings. One shows the national best offer and the national best bid, and we've also been able to absorb that information, line it up with the trade information, and produce the charts and the graphs and analysis that we've showed so far.

Yet a third database gives you the best bid and best offer on an exchange by exchange basis, and we've been able to analyze some of that information, and part of that information has been part of our analysis so far. So trades, quotes, both at the national level and the exchange level, all in three different databases, different formats, different systems and require different ways of merging that information.

What we have not analyzed yet is the order book

that sits behind each exchange's best bid and the exchange's best offer. Those books are built by events that each exchange keeps track of. Now, the exchanges themselves need to do this in real time because they need to determine whether or not there's a match and whether or not they have the best bid or the best offer, and if they're going to reroute or if they're going to accept that and do it internally.

In order for us to reconstruct that, we almost have to reconstruct our own mini version of a trading floor and pretend to be an exchange for the day, taking in all the different orders and the order book. So that is something that we have started engaging and will take some time to complete that.

One thing to note is that we only have the order book for or the potential to see the order book for the exchanges. Internalizers we would not have any information on that, and those are shown in dotted lines, and we need to do this both for the offer book as well as for the bid book.

The orders themselves and how they were processed, whether or not that was a limit order, a market order, contingent order, et cetera, that comes yet in a separate feed from what's called audit trails as opposed to the order book, and those are kept by the exchanges also in different

25 formats, in different databases, and get you back to the

introducing broker where the trade was originally introduced and how it originated.

Since there are multiple exchanges, we will be collecting and have received some of that information already and build that into the analysis to see who is actually selling what and why. But we'll get more of the why in terms of the nature of whether it was a limit order than the who because the who only brings us back to the broker.

If we actually want to go back to the original decider of the trade, we then have to go to each broker and request what are called blue sheets, and in this database, and each broker will have their own forms of this, we will find some of the identifiers for whether or not it was a hedge fund or an asset manager or a retail client.

The data is not designed across the board to be collected in a massive scale. So the names of the participants will only be as good as the way that they are known by the accounts to the brokers. So the same hedge fund can show up under five different names, and we may have to try to piece together some of this information.

What's not shown are some of the colocators, folks who sponsored access who we would not have direct information necessarily from the blue sheets to understand exactly the orders and when they were placed.

MR. COOK: Thanks, Gregg.

So I think the overall point is that what's within the dotted line on this chart is stuff that we can -- is data that we can have ready access to at any given time, and as you move farther away from that, you're talking about pulling in data from various sources that may not be maintained in a consistent format and that takes varying degrees of time to get in house and then has to be validated and made consistent in order to be able to be analyzed.

That's the world that we live in today. The SEC has a meeting scheduled for Wednesday to propose rules that would implement what we are calling a consolidated audit trail, which would really be designed to address precisely this point, to give us the ability and the exchanges in their regulatory capacity, the ability to very quickly get information about orders from the point of origination all the way through their life cycle, through execution in a standardized format. It's a major undertaking, as you can imagine, given the complexities involved, but it would move us substantially forward in being able to undertake the type of analysis that we'd all like to undertake quickly in connection with an event such as May 6th.

Thank you.

MR. SHERROD: I just want to echo some of the difficulties Robert has we also have on the futures side, but

25 in many respects we have it much easier in that the E-mini

trades exclusively on the CME. So that data source is confined to one exchange.

As Gregg mentioned though, we, too, have to do inquiries to the clearing members and the carrying firms to find out the names of the accounts. We have a large trader reporting system where we receive the names of the accounts at the end of the day, but for the intraday trade register, we have to make reverse inquiries as does the SEC to find out the accounts that are being executed through either the CME platform or through the ICE platform.

I'd like to turn to Rick for the next steps on our analysis.

MR. SHILTS: Yes, and this will be slide 53.

While the CFTC staff has been able to gain insights into the events that occurred on May 6th, staff will continue to review other information that it collects or will collect as it relates to this market. Specifically, staff will continue reviewing information from a special call on over 40 traders for their trading activity in the E-mini S&P 500 and Russell 2000 futures contracts on May 6, 2010.

A special call is a CFTC directive to a trader holding a reportable position to furnish any pertinent information concerning the trader's positions, transactions or activities.

Staff also will continue reviewing information from

a special call on swap dealers about their activity in over-the-counter broad based security index derivative markets on that day.

Staff also will continue its detailed review of trader activity on May 6th through an examination of trade register data. To date staff has reviewed over 25 gigabytes of data in over 307,000 files related to the individual trades that occurred that day, with more data expected.

In addition to these areas of analysis specific to May 6th, staff at the CFTC continues to review electronic trading and its effect on liquidity provision in the futures market. Specifically, staff is focused on the practices of high frequency trading and algorithmic trading.

We are also carefully reviewing pre-trade automated safety features.

Now, turning to the next Slide 54, in addition, both SEC staff and CFTC staff working together will review correlated assets and equities including single stocks, mutual funds, and ETFs, as well as options in the futures market. The study would partly focus on examining cross-market linkages by analyzing trading and stock index products, such as equity futures, ETFs, equity index options, and equity index OTC derivatives using, to the extent practicable, market data, special call information and order

book data.

Now I'll return it to Robert.

MR. COOK: Thank you.

We'll be happy to take any discussional questions or comments you might have.

MR. KETCHUM: I think the first basic comment is that looking through on each of the points, you've really anticipated a number of my questions before, and I think you're looking at the right things.

Gregg, I would suggest from experience of having tried to put things together in the fall of '08 that first you have my deepest sympathy, and secondly, wherever you can as you move through the blue sheet information and piecing together the other pieces of the order audit trails, et cetera, where you can focus on flex moments and very short pictures of this rather than trying to recreate the whole period at least as a first step I think you may dramatically accelerate your time to be able to do some thinking about it or for us to be doing some thinking about it.

So I would suggest you think about at least doing it in stages because the data is truly overwhelming.

Robert, on the point you made you made with respect to latencies, one latency over and above the ones I think you mentioned that I think would be of value to look at is the latency of different lines exchanges and internalizers are

using to make their self-help decisions since some use common

lines, some use direct lines to different exchanges, and it would be very interesting to understand whether the aberrant use of self-help during that day had something to do with latencies in lines as opposed to latencies in Arca.

I guess the last point I'd make, which is not to suggest you recreate this in looking at other periods, but I think we can overdo to some degree from a precision standpoint between this particular experience which more underlines the brittleness in the markets we need to address than necessarily the one and only experience.

I think it would be valuable to at least on a broad based way compare what happened on May 6th with what happened in the fall of '08, which is the other time in which unprecedented large numbers of trade cancellations occurred in the equity markets, albeit in a time far more dire than the news that you've described on the 6th.

And the last piece that would be helpful for you to go back on particularly the extent this Committee is going to consider things and as both agencies have indicated they plan to consider the questions of system-wide circuit breakers as well as any pauses in the market. There was one or two events far earlier before system-wide circuit breakers were expanded where those circuit breakers were hit. There was a good deal written and analyzed vis-a-vis gravity impact and

concerns with respect to lower level circuit breakers, and it

would be great if the staff could go back and pull together the analysis that was at least done at that time.

CO-CHAIR SCHAPIRO: Anyone on the phone have anything further?

MR. ENGLE: Just one comment. This is Rob Engle.

When you look at the linkages between derivatives markets, you're talking about options makers who are presumably continuously hedging and some of this event could actually spill into the options market in a way which we haven't seen yet. But it would be interesting to understand how those feedbacks work because they're probably working in the same direction.

MR. COOK: Yes, we agree, and that's something we intend to look at. When we think of the derivatives markets, it won't just be the futures markets. It will also be the options markets, and to the extent we can the OTC markets as well.

CO-CHAIR GENSLER: I want to ask Professor Engle.

So earlier you made a very good suggestion about looking at other periods of volatility, and Mr. Ketchum suggested the fall of '08 or whatever volatile periods I thought, but was it those periods that you were thinking about, Professor Engle, to look back at the volatile periods like in the crisis?

MR. ENGLE: Yes.

CO-CHAIR GENSLER: Or some other periods?

MR. ENGLE: No, I think it would be interesting to see periods in the crisis, but also we've had shorter intermittent periods of high volatility, of course, since then that perhaps might more resemble this event, and so maybe in less detail but more scope would be useful.

CO-CHAIR GENSLER: Great. So we also want to recognize and set aside time for our respective Commissioners. So I don't know which way I'm supposed to do this, but I'll turn left first. We usually do it by seniority, but Commissioner Dunn.

COMMISSIONER DUNN: Thank you, Mr. Chairman.

And thank the great panel we've got here and the hard work that the staff has done on putting this together. When I was acting chair of the Commission, I had indicated that I thought we needed to have joint meetings with the SEC and to look at harmonization of our regulations and to look at risk that transcends both agencies, and I think this is an important step.

I note that it took an act of Congress to be able to do that, and this is probably in looking at the makeup of this Commission and the start that we've got here, this may go down as one of the more successful things that this session of Congress has done.

I would also, Mr. and Madam Chairman, be remiss if

I didn't tell you what a great job you two are doing in working together on harmonization. There's hardly a week goes by that I don't hear from someone saying that, gee, what great cooperation the Gary and Mary team are doing, and I think it bodes well for both of our Commissions on doing this.

I was doing some research on business process reengineering getting ready to look at what Congress is going to lay in our lap as we came up, and I came up with this quote from one BPR group, and it said, "The problem is that we're governing in the 21st Century with processes and organizations designed in the 19th Century to work well in the 20th Century."

And their results were they thought they needed a new process and organization for governance in the 21st Century, and I think this group is putting us well on that way. Thank you again for your help.

CO-CHAIR GENSLER: Mike, thank you very much.

I normally call it the Mary and Gary show, but you know.

But Commissioner Walter. I don't remember your seniority. So I just want to make sure I have it in the right order.

COMMISSIONER WALTER: It doesn't matter.

CO-CHAIR SCHAPIRO: Okay. All right.

COMMISSIONER WALTER: I would like to add my thanks particularly to the staff for their tireless efforts and just note in addition to our upcoming meeting on Wednesday I think this shows the important of cross-market information being available to regulators. It is very important to me that as we go forward, for example, with respect to the OTC markets, that regulators have full information regardless of jurisdictional lines, and I think this exercise underscores that.

So my thanks to everyone in the room, particularly those of you who have volunteered in some way, shape or form to work with us.

CO-CHAIR GENSLER: Commissioner Sommers.

COMMISSIONER SOMMERS: Thank you.

I also want to thank both Chairman Gensler and Chairman Schapiro for pulling this Committee together. I have found the dialogue today to be enormously helpful.

And thank you to the staff for all of your work on this report, and I just want to say that I look forward to your continuing analysis and the information that we're going to get on your further steps.

Thank you.

CO-CHAIR GENSLER: Commissioner Aguilar.

COMMISSIONER AGUILAR: Thank you.

Good morning. First I want to apologize for

arriving late this morning, but months ago I had committed to keynote the start of the 2010 Compliance Week conference this morning. I certainly understand the importance of today's meeting.

And I, too, would like to thank members of the staff of both Commissions for their hard work, which is evident, and I also want to thank the members of the Joint Advisory Committee for their willingness to give their time and expertise to these efforts. Thank you.

And certainly not least, I also want to thank our respective Chairmen, the Mary and Gary show, and my fellow Commissioners at the SEC and the CFTC for agreeing to form this Committee.

The market disruption of May 6th and the inability to promptly analyze and fully understand it has created a sense of urgency and certainly deserve your and our attention. It is essential that we respond to the events of May 6th and address the issues they raise. Today's agenda was a step forward in that discussion.

As we undertake this important work, however, we must also remain focused on the broader issues related to the financial markets. As Committee members, you have been called together at a time of historical significance. It should not be lost on anyone that the essential role of the

financial services sector is to facilitate the allocation of

capital to productive uses. The financial crisis revealed a clear failure of markets and the financial sectors to serve this role with widespread mispricing of assets, trillions in losses, and damaging levels of unemployment and under employment, together with an unprecedented concentration of wealth at the top.

As this Committee does its important work and prepared recommendations for the SEC and the CFTC, I ask that you remember that our markets must serve the public interest by facilitating the real economy and sustainable shared prosperity.

Thank you.

CO-CHAIR GENSLER: Thank you, Commissioner Aguilar.

Commissioner Chilton.

COMMISSIONER CHILTON: Thanks.

There is an old saying in Washington. When in doubt set up a task force or a committee, and in this case I think it's really needed and not just on the May 6th stuff, but for these emerging issues. so we can be more nimble and quick and look around the corner. I think it's very helpful to have this Committee.

I really hate it when in Washington we use this -- and nobody has used this particular phrase here -- but you know, this perfect storm stuff. I mean, I

think it sort of says we don't know what happened. Just all

of these different things, and in listening to staff, who I know have worked really hard and done yeoperson's service, I'm reminded -- remember Colombo? He would say, "And one more thing," or, "if you could just explain this also," as he was walking out the door, and in the meetings that we've had, and I assume my fellow Commissioners in all of our surveillance meetings, I keep feeling like there's one other question I want to ask and one more thing.

But in listening to staff, you have those questions, too. I mean, you're going to get more information. You're going to look at the algo trading. You're going to look at the flash trading. You're looking at ETFs, and to me it's sort of a microcosm in part at least of the entire economic calamity that we faced. You could make arguments about why do we end up, you know, in 2008 and 2009 in this circumstance, legislation, regulation or lack thereof.

But there are lots of questions that we still don't know the answers to, whether or not it's with regard to the OTC markets, you know, 600 trillion out there. Our futures markets are only 5 trillion. It just seems to me we've got a lot of questions, and one more thing out there.

So my take-away from this is it's great we're doing this. I look forward to getting more information, but

overall we need financial regulatory reform. We need that

bill passed that's going to not have going to seek additional information as part of as special committee, as part of a special call or all of these inside the beltway phrases. We need to constantly get this information, have the regulatory tools and the funding in order to effectively implement them and insure that we have efficient, effective markets that are devoid of fraud, abuse and manipulation. And one more thing: that we protect consumers above all.

So thanks very much.

CO-CHAIR GENSLER: Thank you, Commissioner Chilton.

Commissioner Paredes.

COMMISSIONER PAREDES: I just want to add my thanks to everybody who has been working literally around the clock. On the staff, this has been an incredible amount of work and an incredible degree of effort on your part and an incredibly impressive showing to this point.

We know there's still a lot of work to be done, and I certainly look forward to the continued efforts in terms of getting and analyzing the data and seeing where the data ultimately takes us.

I also want to extend my thanks to the members of the Advisory Committee for their sacrifices and all the efforts that they'll be making in the coming months to help us analyze and understand and figure out appropriate

responses.

And of course, to Mary and Gary for their leadership.

CO-CHAIR GENSLER: Thank you, Commissioner Paredes.

Commissioner O'Malia.

COMMISSIONER O'MALIA: Chairman Schapiro, thank you for hosting this inaugural event. I'm pleased that we have, the Commission, appointed the distinguished group of experts from the securities and future industry in order to advise our Commissions on possible solutions to May 6th. I appreciate their willingness to serve and hopefully we'll have some solid recommendations that the two Commissions can implement.

Based on first-hand information I've received in the last several days, I encourage the committees to conduct a more thorough investigation of the significant delays in processing and clearing of trades caused by the overwhelming volumes in the futures markets.

In a lot of this information I believe that the statement on page 7 of the staff report which reads, "Clearing and settlement processes worked efficiently, effectively, and without incident significantly understates the challenges created by the flash crash in the clearly and settlement business." I've learned that thousands of trades were unconfirmed long after trading stopped on May 6th.

On May 7th temporary shutdowns occurred in clearing

queues resulting in the backlogs of hundreds of thousands of trade messages that lasted over the weekend. Without proper confirmation of trades, FCMs and clearing members were unable to accurately mark their books or set appropriate margin levels with the highest degree of confidence.

I hope the Committee will, working with the staff, will further investigate this matter and report back to the Commissions regarding the impacts of the clearing and settlement business as a result of the extreme trading volume.

I also am interested to know if the futures exchanges have implemented a crisis strategy in order to respond to the next spike in trade volume.

I am particularly interested in final recommendations from this panel regarding technology specific issues that the newly established CFTC Technology Advisory Committee can explore in the futures industry.

With respect to time constraints, I have provided some written lists of concerns which I hope the Committee will consider in their deliberations.

Finally, I'd like to thank the hard work of the staff, both the SEC and CFTC and to produce a very thorough analysis of the events on May 6th.

Thank you.

CO-CHAIR SCHAPIRO: Thank you all.

We have one Committee organizational item to address before we recess the meeting. So you'll have to bear with me. We actually have to approve our bylaws.

Briefly, the bylaws specify that the Joint Committee will be jointly presided over by Chairman Gensler and me or by our designated federal officers when directed to do so.

In addition, the bylaws require that with respect to voting a Committee member must be participating in a meeting in person or by telephone or similar communication to cast a vote. When a decision or recommendation of the Joint Committee is required, the presiding officer will request a motion for a vote. Any member may make a motion and vote on that motion. No second is required.

Committee action based on a vote requires approval of a simple majority of the votes cast at a meeting at which a quorum is present.

I think a lawyer wrote all of that.

Before voting on this item, can I ask for a motion to approve the bylaws?

PARTICIPANT: So moved.

PARTICIPANT: Second.

CO-CHAIR SCHAPIRO: Is there any discussion on the

bylaws?

(No response.)

CO-CHAIR SCHAPIRO: All in favor.

(Chorus of ayes.)

CO-CHAIR SCHAPIRO: Any opposed?

(No response.)

CO-CHAIR SCHAPIRO: Thank you. The bylaws have been approved.

Let me again thank the Commissioners of both agencies for their presence today at the Joint Committee meeting. I also again want to thank the staffs of the SEC and the CFTC for their excellent presentations and analysis today. I know how many Saturdays and Sundays I've spent on the phone with all of you, and you are true public servants, and I am incredibly grateful to you.

You've done an incredible job analyzing data, presenting preliminary findings in such a short period of time, and we are very, very grateful.

I also want to thank the Advisory Committee members for reviewing and digesting the joint report in a compressed period of time and for offering today your insights and recommendations on how we might go forward.

We will set up the next meeting of the Joint Committee shortly. You've clearly given us some homework to do and some additional data and analysis that will be useful

to you as you continue your work.

So with that, Chairman Gensler, I don't know if you have any more comments?

CO-CHAIR GENSLER: I just again wanted to thank my fellow Commissioners and the Commission of the SEC and Chairman Schapiro for pulling this together and our Advisory Committee members on short notice -- Susan Phillips reminded me I called her on a Saturday evening to ask whether we could announce her name on Monday. It was very, very generous of you -- for pulling this together.

I can tell by the quality of the questions and the dialogue today we as two Commissions are going to get a great deal form this Advisory Committee.

And lastly, I want to thank the staffs again that really, as Chairman Schapiro has said, has shown what public service can be about. It is really great standards. It is a high bar you have set though.

CO-CHAIR SCHAPIRO: So with that, the open meeting of the Joint Committee will recess to allow for the Committee members to have lunch and discuss administrative issues such as the ethics rules and travel forms that you have to file with us and public record requirements, and following that administrative discussion the meeting of the Joint Committee will adjourn for the day. Thank you all very much.

(Whereupon, at 11:54 a.m., the Joint Advisory

25 Committee meeting was adjourned.)

PROOFREADER'S CERTIFICATE

In the Matter of: JOINT CFTC-SEC ADVISORY COMMITTEE ON EMERGING REGULATORY ISSUES

File Number: 265-26

Date: Monday, May 24, 2010

Location: Washington, D.C.

This is to certify that I, Don Jennings, (the undersigned), do hereby swear and affirm that the attached proceedings before the U.S. Securities and Exchange Commission were held according to the record and that this is the original, complete, true and accurate transcript that has been compared to the reporting or recording accomplished at the hearing.

_____ _____

(Proofreader's Name) (Date)

REPORTER'S CERTIFICATE

I, Jon Hundley, reporter, hereby certify that the foregoing transcript of 115 pages is a complete, true and accurate transcript of the testimony indicated, held on May 24, 2010, at Washington, D.C. in the matter of: Joint CFTC-SEC Advisory Committee on Emerging Regulatory Issues.

I further certify that this proceeding was recorded by me, and that the foregoing transcript has been prepared under my direction.

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