Statement of Frank Hatheway
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1. Introduction and Background

Good morning Chair White, Commissioners, Committee Members and my fellow panelists. My name is Frank Hatheway. I am the Senior Vice President and Chief Economist of Nasdaq. I thank the Commission and the Committee for inviting me here today to discuss the assigned topic of "market volatility" with a particular emphasis on the events of August 24, 2015 and the Research Note on those events released by the SEC staff in December of 2015.

I am pleased to follow my colleague, Tom Wittman, in appearing before the Committee to discuss the important issues the Committee faces. At previous meetings of the Committee, Tom offered Nasdaq's views on U.S. equity market structure and in particular on Rule 611, our strong system of self-regulation, and the importance of equity markets to our global economy. I share Tom's opinions on these issues but will not repeat them today.

For 15 years it has been my privilege to provide Nasdaq with data driven analyses for our many businesses. I also have provided data driven analyses on a number of occasions to the Commission and staff and to the general public. Sound data is vital to making sound decisions. But, there are pitfalls to be avoided even when working from the highest quality data. Furthermore, no data driven solution is immune to the vagaries of time and the consequences, intended and unintended, of that solution.

At its best, data analysis provides an impartial view of all the facts and the staff is to be commended for their efforts to be impartial. Once we agree on what the data is, we can begin the difficult processes of agreeing on what the data means and the even more difficult process of agreeing what to do about it.

Data analysis can provide a stimuli to act or can influence the response to an earlier stimuli. The case before us today in considering the events of August 24th, 2015 is the latter. When we consider the Research Note we are looking at the markets following a single major event. The singular nature of the event confounds interpretation of the data in the Research Note as cause and effect are deeply intertwined as I expect we will hear today. Furthermore, because August 24th was a significant event there will be numerous reactions to it. One challenge for this Committee and the SEC will be determining how any Commission actions will interact with the other independent actions being taken across the industry.

Because of these challenges, two process recommendations are in order in addition to the specific structural changes I will be proposing today. First, the August 24th

Research Note should not be a onetime event. The impact of the various responsives being put into place as we speak should be evaluated in the not too distant future, even in the absence of another major trading event. Second, at the 2014 STA Annual Meeting Nasdaq's Bob Greifeld talked about the desirability of simulating market structure changes in order to lower the costs and risks associated with change. The process of responding to the events of August 24th reminds us of the desirability of such a tool.

2. The Research Note on August 24th.

The starting point of data driven analysis is establishing facts on which we can agree. I do not identify any facts in the Research Note where there is a material disagreement with our own independent analysis. The Research Note also examines several issues which Nasdaq did not evaluate. The Research Note's findings on these issues agree with other third party reports. We seem to have a common set of facts so we are off to a good start.

As the Research Note has already been presented to the Committee, I offer only some condensed interpretations on what went well. First, market technology worked considerably better than on May 6, 2010. The operational performance of major trading centers was equal to the dramatic increase in activity. Market data feeds also met the demands placed on them. And, routing between major trading centers proceeded without declarations of self-help. Second, the new market mechanisms introduced over the last few years performed as designed. Limit-Up-Limit-Down pauses, halts, and re-openings took place. Short selling curbs were imposed. Very few trades were broken under the standardized clearly erroneous polices of the Self-Regulatory Organizations ("SROs). And, as near as we can tell, the software for monitoring the market-wide circuit breakers correctly made the determination not to halt trading.

As we've learned in the past, working as designed doesn't always mean working as intended. As reported in the Research Note, race conditions occurred between Limit-Up-Limit-Down bands and trade executions. Seemingly innocuous and idiosyncratic differences among exchanges in their opening and re-opening processes produced significantly different outcomes. Not in the Research Note but reported elsewhere was the claim that trades at prices likely to be considered unacceptable to an investor remained unbroken by the SROs.

Of greater concern is that the Research Note found that issues identified as problematic in 2010 remained problematic in 2015. Market orders, including many likely associated with retail investors' stop-loss orders, hit the markets at a time when the markets were less than able to smoothly execute them. Decoupling occurred between CFTC and SEC regulated index products and between index products and their underlying assets. The amount of available liquidity on order books was much less than normal. Trading pauses in the equities and futures markets remained out of synch. These issues were a challenge in 2010 and remain a challenge today.

Finally, and of greatest concern, are the implications in the Research Note for the market's ability to identify and handle a systemic event. The market wide circuit breaker based on the S&P 500 index as reported by S&P did not trigger on August 24th. The circuit breaker might have triggered had it followed either the S&P 500 futures price or the Net Asset Value ("NAV") of the S&P 500 as determined by consolidated trading. Already announced changes in exchange opening processes may tie the S&P 500 index more closely to its NAV. The market wide circuit breaker may well trigger if a repeat of August 24th were to occur. The general sense of market participants I have spoken with is relief that the market wide circuit breaker did not trigger. That sense does not inspire confidence in what may happen next time.

3. Our Views

Industry participants are already addressing many of the gaps identified in the Research Note where systems worked as designed but not as intended. The SRO participants in the Limit-Up-Limit-Down plan are working to address "leaky bands" and eliminate those race conditions. Individual SROs are changing opening and-reopening rules and procedures which were criticized after August 24th. Both are worthy efforts and we fully support them.

I would like to focus the remainder of my time on the issues which are proving more problematic. Idiosyncratic differences between exchange trading mechanisms will remain once the announced changes are complete. We strongly endorse that. We have criticized certain one-size-fits-all aspects of our current market structure and do not believe that exchanges should be forced into a single common design for opening or re-opening the wide range of securities that we list. Innovation and competition have benefited investors, will continue to do so, and should not be stifled.

Many of the remaining issues can be put under the broad umbrella of addressing unusual market conditions. Rather than going through a list of suggestions for addressing the concerns raised by August 24th I offer a few thoughts on what the main tools at our disposal are supposed to do. These are my views of the main purposes of these mechanisms, you all may have your own perspectives.

The Clear Erroneous Execution ("CEE") rules are primarily intended to protect brokers and their clients from the financial loss associated with a "fat finger" trading error. The best purpose I can come up with for short sale constraints is reducing the risk of market disruption due to manipulative or speculative short selling. Trading pauses, either in the securities markets or futures markets, are designed to allow liquidity to return to order books after it has been depleted. Individual security trading halts allow the market to gather and respond to information affecting trading in the security. Finally, market wide circuit breakers limit the consequences from a systemic event.

And if only there were a bright line between each of the threats that all these mechanisms are designed to address. But there is not. Therefore we can only strive for better-than-today and not for perfection.

4. Our Recommendations

We endorse synchronizing the CEE rules and Limit-Up-Limit-Down bands for normal trading. We do not endorse eliminating SRO CEE authority entirely because in our experience erroneous executions can occur in variety of sometimes unique and extraordinary circumstances. Such trades should not stand.

The Limit-Up-Limit-Down process is in the process of being refined by the Plan's operating committee. CEE harmonization, timing gaps, tier calculations, width of the bands, are all under active consideration and we endorse these changes.

Market orders presuppose that the order is small relative to the market and that the order is uncorrelated with other market orders. In other words, that there is a market capable of absorbing both the market order and other concurrent orders. When that is not the case, there is no market. There are a variety of proposals to address market order "waves". I am skeptical of whether they would be successful and suggest that the Limit-Up-Limit-Down processes as being modified by the Plan operating committee and the individual SROs be allowed to demonstrate whether it can address this issue. Simply put, if we become more adept at switching from continuous trading to well functioning auctions we may address this issue.

Finally, widespread decoupling, a market wide loss of liquidity, and ultimately the activation of the market-wide circuit breaker are all symptoms of a potential systemic event. While thankfully rare, the number of once-in-a-lifetime experiences I've had in my 30 years in the industry indicates that these events are not rare enough. We cannot plan in detail for these events but we can better identify them. The futures industry using the futures price, and the securities industry using the S&P 500 index price as calculated by the index provider, seems an obvious disconnect which should be addressed as soon as possible. A much greater challenge is preparing the industry to re-open after such an event and deserves time and effort from all of us.

5. Conclusion

I thank the Chair, the Commissioners and the Committee for their time and attention. We appreciate the Committee's thoughtful consideration of these issues and welcome the opportunity to work with the Commission and the Committee to consider important changes in market structure for the benefit investors and listed companies. I look forward to your questions.