Remarks before the Economic Club of New York
"Strengthening Our Equity Market Structure"
SEC Chairman Mary L. Schapiro
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Thank you, it's an honor and a pleasure for me to be here.

As leaders of the business and financial community, I know you appreciate the important role equity markets – and equity market structure – play in our economic growth and job creation.

When we speak of market structure, we are talking about everything from the number and types of venues that trade a financial product to the rules by which they operate. And, although these issues can be complex and the rules obscure, a stable, fair, and efficient market structure is the backbone of our capital markets.

But market structure issues resonate beyond the markets themselves. Equity markets are a vital engine of economic growth. Our markets have a profound impact on the rate at which our economy grows and creates jobs. And, they have an impact on the welfare of millions of individual Americans looking to save for college or their retirement.

Equity markets support these objectives by turning the savings of investors into capital for business, enabling a flow of funds from investors to entrepreneurs and then back again through dividends and capital gains.

Those who purchase stock in an initial public offering, for example, can have confidence that they will be able to sell that stock at a fair and efficient price in the secondary market when they need or want to. And of course, the values assigned to stocks in the secondary market play an important role in the ability of companies to raise additional funding.

Markets are powerful and they are the most efficient and effective tools for turning savings into capital and growth.

But, if the equity market structure breaks down – if it fails to provide the necessary and expected fairness, stability, and efficiency – investors and companies pull back, raising costs and reducing growth.

Ensuring the quality of equity market structure is an essential part of the SEC's investor protection and capital formation mission. And we appreciate that as we evaluate the quality and state of our markets, the stakes are high.

Changes in Market Structure

The U.S. equity market structure has changed dramatically in recent years.

A decade ago, most of the volume in stocks was executed manually, either on the floor of an exchange or on traders' desks. Now, nearly all orders are executed by fully automated systems at great speed. The fastest trading venues are now able to accept, execute, and send a response to orders in less than one thousandth of a second. Sophisticated trading firms can process market information, generate buy or sell orders, and send them to an exchange in less time than it takes to blink your eye.

And speed is not all that has changed. As little as five years ago, the great majority of the capitalization of U.S. equities was traded on a listing market – the New York Stock Exchange – that executed nearly 80 percent of volume in those stocks.

Today, the NYSE executes approximately 26 percent of the volume in its listed stocks. The remaining volume is split among more than 10 public exchanges, more than 30 dark pools, and more than 200 internalizing broker-dealers. Indeed, today, nearly 30 percent of volume in U.S.-listed equities is executed in venues that do not display their liquidity or make it generally available to the public. The percentage executed by these dark, non-public markets is increasing nearly every month.

This electronic market structure also has opened the door for entirely new types of professional market participants. The traditional specialist and market maker roles in manual markets have largely disappeared as the market structure has evolved.

Today, proprietary trading firms play a dominant role by providing liquidity through the use of highly sophisticated trading systems capable of submitting many thousands of orders in a single second.

These high frequency trading firms can generate more than a million trades in a single day and now represent more than 50 percent of equity market volume. And many firms will generate 90 or more orders for each executed trade. Stated another way: a firm that trades one million times per day may submit 90 million or more orders that are cancelled.

This transformation of market structure has raised serious questions and concerns. To evaluate them fully and carefully, the SEC published a concept release on equity market structure in January. The release factually and in detail described the current market structure and then broadly requested comment from the public.

The Commission has received more than 200 comments on the concept release. Many pointed out important benefits of the current market structure. They particularly noted that it has fostered competition among trading venues and liquidity providers that has lowered spreads, and that brokerage commissions have never been lower.

But some investors and others raised concerns, including two concerns that go to the core of our equity market structure: First, whether the quality of price discovery has declined, and second, whether these changes in our market structure could undermine the fair and

level playing field essential to investor protection, capital formation and vibrant capital markets generally.

May 6

A mere two weeks after the end of the comment period, the U.S. equity markets experienced the worst price decline and reversal since 1929. At 2:40 on the afternoon of May 6, the broad market indexes dropped more than 5 percent in five minutes, only to rebound almost entirely in the next 90 seconds.

At the worst end of the spectrum, 324 securities suffered price moves of more than 60 percent from their 2:40 p.m. prices, leading to the exchanges cancelling more than 20,000 trades. Many of these broken trades were executed at absurd prices of one penny or less per share.

May 6 was clearly a market failure, and it brought to the fore concerns about our equity market structure. The staffs of the SEC and CFTC are finalizing a joint report on our inquiry into the day's events that will be published in the coming weeks.

But we have not waited for the report to begin taking steps to address weaknesses identified on May 6. We quickly worked with the exchanges to develop a pilot program of circuit breakers for many individual stocks – circuit breakers that provide a trading pause if prices move by 10 percent or more within a five-minute period, allowing time for market participants to regroup and assess the value of a stock. And the exchanges have proposed rules that give more objective guidance on when trades will be broken as a result of aberrant prices.

While these were useful, necessary and immediate steps, I believe the rules that govern our equity market structure more broadly need to keep up with the changes in the market – so that our markets retain the confidence of investors and companies.

Investor Concerns about Market Structure

Some could argue that May 6 was an aberration – another "perfect storm" – and now that it has passed – markets have naturally adapted leaving no need for comprehensive review of our market structure. I disagree. I believe that important questions remain that deserve our attention.

Many individual investors, for example, have submitted comments to the Commission that are highly critical of the current market structure. Retail broker-dealers have told us that their customers – individual investors – have pulled back from participating in the equity markets since May 6. Indeed, according to mutual fund data, every single week since May 6 has seen an outflow of funds from equity mutual funds.

I recognize that there may be a variety of reasons for reduced participation in the equity markets, but the trend is troubling, particularly if concerns about equity market structure are playing even a small role in investor decision-making.

To understand where individual investors are coming from, we must truly recognize the impact of severe price volatility on their interests: one example is the use and impact of stop loss orders on May 6. Stop loss orders are designed to help limit losses by selling a stock when it drops below a specified price, and are a safety tool used by many individual investors to limit losses.

The fundamental premise of these orders is to rely on the integrity of market prices to signal when the investor should sell a holding. On May 6, this reliance proved misplaced and the use of this tool backfired.

A staggering total of more than $2 billion in individual investor stop loss orders is estimated to have been triggered during the half hour between 2:30 and 3 p.m. on May 6. As a hypothetical illustration, if each of those orders were executed at a very conservative estimate of 10 percent less than the closing price, then those individual investors suffered losses of more than $200 million compared to the closing price on that day.

Institutional investors, also have expressed serious reservations about the current equity market structure. At our June roundtable discussion of market structure issues, several institutional investors questioned whether our market structure meets their need to trade efficiently and fairly, in large size.

Their views were shared by many respondents to a survey that was submitted as a comment letter on the market structure roundtable. Less than 50 percent of the buy-side respondents, for example, expressed confidence in the current market structure. When these professionals – representing the interests of many millions of individuals who invest indirectly in the equity markets – express concern in the U.S. equity market structure, we must listen closely.

Steps to Strengthen the Equity Market Structure

It falls to the SEC to ensure that the rules governing market structure and market participant behavior foster fair, reliable and resilient markets that warrant the full confidence of investors and listed companies. The SEC already has taken a number of important steps to further this goal.

- We have proposed rules that would effectively prohibit broker-dealers from providing third-parties with unfiltered access to the markets and require that broker-dealers implement appropriate risk controls for market access.
- We have proposed large trader reporting requirements and a consolidated audit trail system that would tremendously enhance regulators' ability to identify significant market participants, collect information on their activity, and analyze how their trading behavior affects the market.

- We have proposed to ban the display of flash orders that may give an inequitable advantage to certain traders, and to prevent information about buying and selling interest in dark pools from being made available only to a select group of participants in the pools.

All of these initiatives are important, but likely not sufficient. Given the stakes and the seriousness of the concerns, we must look closely and comprehensively at the full range of issues, identify if and where the market structure is not fulfilling its mission, and take appropriate steps so that it does.

Circuit Breakers

First, we should reexamine the circuit breaker mechanisms that directly limit price volatility. These include the recently adopted circuit breakers for individual stocks, as well as the longstanding broad market circuit breakers that apply across the securities and futures markets.

For instance, the existing circuit breakers for individual equities were an essential first step – but I believe they can be improved. Currently, the circuit breakers can be triggered by anomalous trades that may not warrant pausing all trading in the stock for 5 minutes. I believe our next steps are likely to include a careful review of a limit up/limit down procedure that would directly prevent trades outside specified parameters, while allowing trading to continue within those parameters. Such a procedure could prevent many anomalous trades from ever occurring, as well as limiting the disruptive effect of those that do occur.

However, such a mechanism has potential downsides as well. Sometimes a company is affected by fundamental factors that may warrant a significant move in price. Under existing rules, a full pause in trading, in these circumstances, can facilitate an orderly price discovery process that allows market participants to assess the stock and collectively arrive at a new consensus price. I believe we should work to develop an improved circuit breaker mechanism that secures the advantages of both limit up/limit down and trading pauses.

Another important issue, as we craft an improved circuit breaker mechanism, is the parameters at which they are triggered – currently a price move of 10 percent or more within five minutes. Clearly there are trade-offs, but is this an acceptable level of volatility that promotes investor confidence in the integrity and stability of the markets?

The other category of circuit breaker halts trading in all securities and securities-related futures based on a price move in the Dow of at least 10 percent. None of these circuit breakers were hit on May 6, but they too must be reviewed in light of our current markets.

The liquidity failure that day highlighted the vulnerability of the automated liquidity providing algorithms used by a wide variety of trading firms in thousands of individual

stocks and ETFs. Many of these algorithms are programmed to pull back or withdraw from the market entirely in the event of an abnormal price move in one or more broad market index products.

We need to consider what types of circuit breakers with what parameters – for all our highly interconnected capital markets – are required to provide price discovery and minimize artificial short-term market shocks.

Even if all circuit breakers are set with appropriate parameters, however, they should be considered fail safe mechanisms – we must also consider steps to promote ongoing reliable price discovery so that circuit breakers are very rarely needed.

High Frequency Trading

A second area that warrants close review is the regulatory scheme that applies to the most active and sophisticated participants in today's market structure – high frequency trading firms.

In the old manual market structure, the market participants with the best access to the markets – the specialists on the dominant exchanges – were subject to significant trading obligations that were designed to promote fair and orderly markets and fair treatment of investors. These included affirmative obligations to provide liquidity and to promote price continuity, as well as negative obligations to forego trading in ways that would exacerbate price moves – such as aggressively taking out bids during a price decline and thereby driving prices even lower.

These traditional obligations have fallen by the wayside as the market structure evolved and the traditional specialist role became obsolete. Today, in contrast, the obligations that apply to most registered market makers are minimal. In fact, many very active liquidity providing firms are not registered as market makers, and some active firms are not even registered as broker-dealers and thereby fall entirely outside the regime for regulated entities.

We should consider the relevance today of a basic premise of the old specialist obligations – that the professional trading firms with the best access to the markets (and therefore the greatest capacity to affect trading for good or for ill) should be subject to obligations to trade in ways that support the stability and fairness of the markets.

For example, the stocks with broken trades on May 6 highlight the fact that the order book liquidity in those stocks completely disappeared, if only briefly, and caused trades to occur at absurd prices. Where were the high frequency trading firms that typically dominate liquidity provision in those stocks?

I anticipate that the May 6 report will discuss the reasons that caused these firms to pull back, which they believed to be in their interest. The issue, however, is whether the firms

that effectively act as market makers during normal times should have any obligation to support the market in reasonable ways in tough times.

Conversely, should the most sophisticated and active trading firms that ordinarily act as liquidity providers be allowed to suddenly become aggressive liquidity takers during a price move in a way that exacerbates the price move? As just noted, the old exchange specialists were prohibited from adopting such a destabilizing trading strategy. Should today's liquidity providers be subject to an analogous restriction?

Order Cancellations

A third type of trading practice that has received recent attention involves submitting large volumes of orders into the markets, most of which are cancelled. We know that, in the ordinary course, many high frequency trading firms cancel 90 percent or more of the orders they submit to the markets. There may, of course, be justifiable explanations for many cancelled orders to reflect changing market conditions.

The SEC and other regulators are looking carefully at certain practices in this area to assess whether they violate existing rules against fraudulent or other improper behavior.

But we also must understand the impact this activity has on price discovery, capital formation and the capital markets more generally, and consider whether additional steps such as registration and trading requirements are needed to ensure that these and other practices are used only in ways that foster – not undermine – fair and orderly markets. For example, one step would be to require a minimum "time-in-force" for quotations, particularly if they were submitted by market participants who otherwise were not subject to meaningful obligations governing their quoting behavior.

Fragmentation

Finally, there is market fragmentation. As I already noted, trading volume in stocks is split among many different exchanges and trading venues. Some display quotations that are made widely available to the public, and some do not.

The volume of orders that are executed in non-public, dark trading venues, such as dark pools and internalizing broker-dealers, is increasing. They now execute nearly 30 percent of volume, up from approximately 25 percent one year ago. What is the effect of these venues on public price discovery and market stability?

On May 6, for example, the share of volume executed by dark venues plummeted from 30 percent to 10 percent during the height of the market disruption. In a time of duress, the public markets were the ones that received the flood of sell orders. Can we expect the public markets to handle nearly all the order flow in tough times, yet be bypassed routinely by a large volume in normal times?

Of course, the other side of the coin with respect to dark venues is reflected in the fact that many institutional investors fear that trading in the public markets in large size will cause prices to run away from them. Given the public markets unique role in price discovery, we must be careful that the short-term advantages to individual traders from non-transparent trading does not undermine all investors in the long run by compromising the essential price discovery function of the public markets.

Conclusion

The structure of today's markets undoubtedly offers many advantages. And, we should not attempt to turn the clock back to the days of trading crowds on exchange floors. But we must carefully consider whether our market structure rules have kept pace with the new trading realities.

The important questions are "to what extent is our structure meeting or failing to meet its goals of fair, efficient and transparent markets, and how can we modify the structure to preserve the advantages and eliminate the flaws?"

Answering these questions will not be easy, but I do know this: hard and careful work to strengthen our equity market structure will bring important dividends to investors, companies, and the economy as a whole.