

**MARKET STRUCTURE: ENSURING ORDERLY,
EFFICIENT, INNOVATIVE, AND COMPETITIVE
MARKETS FOR ISSUERS AND INVESTORS**

HEARING
BEFORE THE
SUBCOMMITTEE ON CAPITAL MARKETS AND
GOVERNMENT SPONSORED ENTERPRISES
OF THE
COMMITTEE ON FINANCIAL SERVICES
U.S. HOUSE OF REPRESENTATIVES
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MARKET STRUCTURE: ENSURING ORDERLY, EFFICIENT, INNOVATIVE, AND COMPETITIVE MARKETS FOR ISSUERS AND INVESTORS

Wednesday, June 20, 2012

U.S. HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON CAPITAL MARKETS AND
GOVERNMENT SPONSORED ENTERPRISES,
COMMITTEE ON FINANCIAL SERVICES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:06 a.m., in room 2128, Rayburn House Office Building, Hon. Scott Garrett [chairman of the subcommittee] presiding.

Members present: Representatives Garrett, Schweikert, Royce, Manzullo, Biggert, Neugebauer, Campbell, Pearce, Posey, Hayworth, Hurt, Grimm, Stivers, Dold; Waters, Miller of North Carolina, Maloney, Moore, and Green.

Also present: Representative McHenry.

Chairman GARRETT. Good morning. Today's hearing of the Subcommittee on Capital Markets and Government Sponsored Enterprises, entitled, "Market Structure: Ensuring Orderly, Efficient, Innovative, and Competitive Markets for Issuers and Investors," is called to order.

We welcome the panel before us, and look forward to an interesting hearing this morning on this, as someone was just saying to me in the audience, very timely matter. Before we get to our panelists, we will have an opportunity for opening statements, and with that, I will recognize myself for 3 minutes.

And as I say, today's hearing has a fairly long title, "Market Structure: Ensuring Orderly, Efficient, Innovative, and Competitive Markets for Issuers and Investors."

I believe that when examining the state of our equity markets, we must first look at the data, and the data tells us something, that by any traditional measuring stick, the United States equity markets are the best in the world, whether it is at execution of speed, liquidity, or pricing, both retail and institutional investors are recognizing the direct benefits of this very evolving marketplace.

So what I am hopeful to learn about from our two esteemed panels that we have today are ways that Congress, the regulators, and the market participants can continue to ensure that our markets remain the envy of the world. Specifically, I look forward to learning and hearing some ideas from all of you on: first, promoting improved competition between the market participants; second, in-

creasing innovation in the marketplace; and third, facilitating additional capital formation for small businesses.

First, I believe that improved competition in the wake of implementation of Regulation National Market System (Reg NMS) has been a major contributor to the improved data seen in our equity markets. Narrower spreads, faster execution, and increased liquidity have all been direct results of additional competition in the marketplace. And so promoting improved competition should be achieved by lowering barriers to entry and establishing a more efficient process to bring new technology to bear, not by saddling market participants with additional burdens and raising transaction costs eventually to the investors.

Second, increased innovation in the marketplace must be a priority. Technological innovations in our marketplace over the last decade have really been amazing. Markets have become more automated, and I believe this automation has yielded significant positives for all the investors. While there have been isolated cases out there we have read about in the paper—things like flash crash and the recent Facebook IPO—we must look at the empirical data as a whole because if you focus simply on a couple of isolated anecdotal evidence or events, I think that takes away from the truly extraordinary strides that have been made in large part because of the technological innovations in the marketplace.

And finally, on the heels of the successful and bipartisan JOBS Act, I look forward to examining ways to facilitate additional capital formation for small businesses. While the JOBS Act will help small businesses go public, I am also interested in further discussing ways to help increase liquidity and trading once they do.

So there are two proposals out there. One, Mr. McHenry has a draft legislation to implement a market quality incentive program, and Mr. Schweikert over here has a proposal to allow for increased tick sizes for smaller companies. These could be ways to provide much needed support for small businesses. As I say, I believe that Reg NMS has achieved many benefits for the large cap firms. I am not certain that the current one-size-fits-all is in its best interests.

So, in conclusion, as a piece of advice to the regulatory community, I quote my good friend, Mr. Hensarling, who is not here, who often says, “First, do not harm.” I guess that was not Mr. Hensarling; Hippocrates actually said that originally, but anyway, any change to the rules of the equity markets should be a thoughtful, empirical data analysis and benefits of any potential change. Ensuring we maintain the deepest, most liquid, and most efficient equity markets in the world is a top priority of this subcommittee, and I do look forward to a robust discussion today on these important issues and examining whether there are better ways to facilitate investment, capital formation so American businesses can grow and create jobs.

And with that, I look to our next speaker, and neither one are here. Does the vice chair have—no?

Mr. SCHWEIKERT. Mr. Chairman, I can do the other side if you want.

Chairman GARRETT. Mr. Schweikert will speak for the other side of the aisle for 10 minutes. No, I guess not.

With that, since the other two gentlemen on our side of the aisle have not arrived yet, we will then go to why we are really here, not to hear from us, but to hear from the panel.

So we look to the members of the panel to make your presentation. First, will be Mr. Coleman.

And, of course, for those of who you have been here before, you know your complete written statement will be made a part of the record, and so you can summarize your statement in 5 minutes.

I think I say this every single day to people, make sure you push your microphone on and make sure, most importantly, that you pull the microphone as close as you can because someone will say that to you during the course of your remarks.

So, good morning, Mr. Coleman, and you are recognized for 5 minutes.

**STATEMENT OF DANIEL COLEMAN, CHIEF EXECUTIVE
OFFICER, GETCO**

Mr. COLEMAN. Good morning, Chairman Garrett, and members of the subcommittee. My name is Daniel Coleman, and I am the chief executive officer of GETCO. GETCO is a global trading firm providing multi-asset class market-making and trade execution services for institutional clients, broker-dealers, and investors. GETCO participates in the market both as a liquidity provider, through our market-making services, and as an agency broker executing customer orders.

As a firm, we say we are market-driven, that is, our business is predicated on the integrity and soundness of the global capital markets. For this reason, I am honored to be here today with my distinguished fellow panelists.

Today's hearing offers the opportunity for a comprehensive discussion about the quality of our markets and the reforms policymakers should be considering. Specifically, my remarks will touch upon the need for a more concerted focus on policy measures designed to increase stability and foster confidence; the challenges institutional investors face in sourcing liquidity and understanding whether their trades are, in fact, receiving best execution; and finally, the benefits and risks posed by a more automated marketplace.

Past policy initiatives have promoted competition and innovation. This, in turn, has leveled the playing field for new entrants. The "old boy's club" that existed on many of the trading floors is gone. In keeping with the best qualities of capitalism, ability above all else is now the most critical determinant of success. As with any highly competitive marketplace, firms that are unable or unwilling to meet changing markets will struggle. The global market demands change, and companies adapt or they disappear. That is the power of competition.

When it comes to market structure, however, the power of competition without the stability and confidence to attract investors and issuers leads to highly efficient markets that serve no purpose. The markets need confidence above all else.

Today, investor confidence has been shaken by a series of high-profile events that paint a picture of an overly complex, fundamentally fragile market system. Individual investors are skeptical of

our markets in part because of the prolonged economic downturn and in part because of a host of new and nefarious sounding terms that seem unnecessarily complex and opaque. And yet, the individual investor's cost of execution is unquestionably better than ever before. If it were not for these high-profile, confidence-shaking events, I believe the individual investor would have few qualms with their overall experience.

The institutional investor, on the other hand, does have justifiable issues with how the market structure has changed their day-to-day business. Executing larger orders throughout the day, institutional trading desks face the issue of lack of transparency due to speed and fragmentation. This leads to a sense, I would say, of a loss of control.

As a former trader, I know how disconcerting it can be to place an order and not have confidence in how it is being executed. Back in the day, when I was a trader, I could hit up time and sales on my market data system. I could see my order, and I would know when it traded. Today, it is impossible to tell which trade is yours. It is this loss of control that causes many critics to long for the markets of old. While highly inefficient, they were far simpler to understand and to navigate, but attempting to roll back the clock is shortsighted, if not impossible.

So what should be done to holistically address these concerns? It is our belief that policymakers must place the same emphasis on fostering market stability that they once placed on increasing market efficiency and competition. As part of this focus, we urge regulators: first, to consider modernizing market-maker obligations; second, to make a concerted effort to provide more stringent standards around what constitutes best execution for institutional investors; third, provide greater flexibility for exchanges to compete; and, finally, to emphasize the thoughtful testing and deployment of new trading technology to minimize risks posed by errors or bugs.

In conclusion, all of our lives have become increasingly complex as a result of the immediacy, access, and optionality technology presents. Understanding how to harness these benefits while minimizing their concurrent risks is not a phenomenon unique to financial services. Regulators should move swiftly to implement sensible reforms and to put stability on the same footing with efficiency and competition. We should look to minimize disruptions from new technologies and strive to return a measure of control to the institutional investor. All of these steps are necessary if we are to retain public confidence in the overall health and integrity of our global capital markets. Thank you.

[The prepared statement of Mr. Coleman can be found on page 56 of the appendix.]

Chairman GARRETT. And I thank you, Mr. Coleman.

Good morning, Mr. Cronin. We welcome you here, and you are now recognized for 5 minutes.

STATEMENT OF KEVIN CRONIN, GLOBAL HEAD OF EQUITY TRADING, INVESCO, ON BEHALF OF THE INVESTMENT COMPANY INSTITUTE (ICI)

Mr. CRONIN. Good morning. Thank you for having me today, Chairman Garrett and members of the subcommittee, and thank you for the opportunity to speak here today.

My name is Kevin Cronin, and I am global head of equity trading for Invesco. Invesco is an independent global asset management firm with operations in more than 20 countries and assets under management of \$632 billion. Our responsibilities including managing the equity, equity derivatives, and FX trading activities of the 45 traders Invesco employs on 9 trading desks in 7 countries.

I am pleased to participate today on behalf of the Investment Company Institute at this hearing, examining the structure of the U.S. securities markets. ICI is the national association of U.S. investment companies, including mutual funds, closed-end funds, ETFs, and unit investment trusts. The structure of the securities market has a significant impact on ICI members, who are investors of over \$13 trillion in assets and who held 29 percent of the value of publicly traded U.S. equity outstanding at the end of 2011. ICI members are institutional investors but invest on behalf of over 90 million individual shareholders.

We are encouraged by the benefits that advancements in market structure have brought to funds and other investors. In general we believe investors, both retail and institutional, are better off now than they were just a few years ago. The costs of trading have been reduced. More trading tools are available to investors with which to execute trades. And technology has increased the efficiency of trading overall.

Nevertheless, there are a number of steps which I will outline in a moment that we believe can be taken to further enhance the quality of U.S. markets, securities markets.

One of the fundamental elements of an efficient market also is active participation of long-term investors. It is therefore important that operation of securities markets fosters the confidence of investors. Unfortunately, long-term investor confidence has recently been challenged by a series of scandals, financial crises, and technological mishaps affecting trading venues. To further improve the quality of the securities markets and to ensure long-term investor confidence, we believe it is time for regulators and market participants alike to address and to take action on many of the difficult and complex issues impacting investors today. These include conflicts of interest that exist in the markets, including those surrounding so-called liquidity rebates and the increased number and complexity of the types of orders utilized by market participants.

In order to gather data to examine the impact of liquidity rebates on the markets, ICI recommends that a pilot program be established where a set of securities would be prohibited from being subject to liquidity rebates. We also recommend that regulators vigorously examine any conflicts of interest raised by order types and ensure sufficient and readily available information on the details of order types are available to all investors.

Issues surrounding automated trading and high frequency trading also may impact investor confidence. While ICI believes auto-

mated trading and certain high frequency trading strategies arguably bring several benefits to the securities markets, regulators and market participants must act to address several issues of concern to investors, including, for example, the number of order cancellations in the securities markets, and consider truly meaningful fees or other deterrents that would adequately address this behavior. In addition, the need for enhanced surveillance capabilities to detect potentially abusive and manipulative trading practices cannot be ignored.

Participation by and confidence of long-term investors in the market also is critical to the capital formation process. Difficulties surrounding capital formation, particularly for small companies that want to come to market, have been well-documented. ICI strongly supports the need to stimulate capital formation. We therefore recommend that a pilot program be established to examine whether changes to the current penny spread should be implemented.

Finally, issues associated with undisplayed liquidity must be examined. For ICI members like myself who frequently execute large block orders, venues that provide undisplayed liquidity, such as the so-called dark pools, are critical to lessen the cost of implementing trading ideas and mitigate the risk of information leakage. We would be concerned if any regulatory reforms impeded funds as they trade securities in such venues.

Broker-dealer internalization, however, is a form of undisplayed liquidity that does raise concerns for investors. Internalization may increase market fragmentation and degrade the price discovery process because it can result in customer orders not being publicly exposed to the markets. In addition, it may risk conflicts of interest between broker-dealers and their customers. We, therefore, recommend that any internalized orders should be provided with significant price improvement.

ICI looks forward to working with other market participants to tackle these complex issues to ensure the securities markets remain highly competitive, transparent, and efficient, and that the regulatory structure that governs the securities markets encourages rather than impedes liquidity, transparency, and price discovery. Thank you, and I look forward to answering any questions you may have.

[The prepared statement of Mr. Cronin can be found on page 70 of the appendix.]

Chairman GARRETT. And I thank you.

Good morning, Mr. Gawronski, and welcome to the panel. You are recognized for 5 minutes.

**STATEMENT OF JOSEPH C. GAWRONSKI, PRESIDENT AND
CHIEF OPERATING OFFICER, ROSENBLATT SECURITIES**

Mr. GAWRONSKI. Good morning.

Chairman Garrett, Ranking Member Waters, and members of the subcommittee, thank you for convening today's hearing on equity market structure and inviting us to share our views. My name is Joe Gawronski, and I am the president and chief operating officer of Rosenblatt Securities. Rosenblatt is an agency broker serving

institutional investors in the U.S. equities markets and an authority on market structure.

Traders, investors, exchanges, and governments all around the world rely upon our independent granular analysis of the rules, regulations, competitive dynamics, and behavior of participants in equity and derivative markets globally. We have studied extensively the massive changes to U.S. equity market structure that have occurred since 1996. We have also lived through them as brokers representing institutional orders in the market. We believe there are two major points regarding market structure that must be understood above all others by the subcommittee.

First, today's market structure is a Rube Goldberg creation of sorts. It is the product of a gradual 15-year evolution during which government repeatedly acted in big ways and market forces repeatedly reacted accordingly. The result of this to and fro is that today's profoundly complex patchwork market structure is certainly not what one would have designed if starting with a blank slate. But it generally results in better outcomes for both retail and institutional investors than what it replaced. This is a second major point.

With apologies to Sir Winston Churchill, what we have today is the worst market structure possible except for all the others that have been tried. This does not mean that things are perfect. There are a few critical problematic gaps in today's structure that merit exploration by regulators and legislators. Among these are the rules regarding off-exchange trading, safeguards against systemic risk, and the quality of markets for shares of smaller companies, and best execution obligations of brokers need to be enforced given the conflicts today's market structure engender.

In our written testimony, we have elaborated to some extent on how we got to where we are today with this cycle of government action and market reaction, with the order handling rules, Reg ATS, decimalization, and finally Reg NMS being the highlights. But to provide a thorough count here would require more of your time and patience than we have today. Importantly, the result of all of it is that both explicit costs such as exchange fees and brokerage fees, as well as the implicit costs such as bid-ask spreads and market impact have come down dramatically during this period. Investors who once paid 25 cents per share in spread alone when buying and selling stocks like Intel and Microsoft now pay no more than a penny or two. Exchanges that once extracted monopoly rents from trading customers now compete vigorously to offer the lowest fees.

But there are corners of the market that either have not shared in the benefits of this transformation or have largely failed to transform in ways that result in the best possible outcomes for investors. One such cause for concern is the explosion in off-exchange trading in recent years. According to our analysis of public data, 16.4 percent of U.S. equity volume was executed away from markets that display price quotes in January of 2008. By January 2012, nondisplayed trading had more than doubled to an all-time high of 34.2 percent.

According to nonpublic data that we collect directly from the various brokers and ATSs, about 14 to 15 percentage points of this off-

exchange trading is done in so-called dark pools. Most of these trades are executed at the midpoint of the national best bid-offer spread, so both customers receive significant price improvement, but a significant fraction of off-exchange trades do not result in materially better outcomes and therefore do not seem justified in receiving special rule protection. A minority of trades in the aforementioned dark pool simply match the NBBO or offer de minimis price improvement over the best prices quoted on the exchanges.

Additionally, we estimate that approximately 10 percentage points of off-exchange market share is retail orders that are executed as principal by wholesale market makers. In the vast majority of cases, these wholesalers either match the NBBO or offer de minimis price improvement, about 10 percent of the spread. Typically, the wholesalers also offer cash payments to the retail brokers of roughly 10 to 15 cents per hundred shares. The end customer benefits from any price improvement if offered but does not see any of the payment for order flow, which is kept by the retail broker. In a few cases, big online brokers serving retail customers have contracted to execute either 100 percent or substantial portions of marketable customer order flow with certain wholesalers.

The vast majority of liquidity-seeking retail orders in the United States never interact with the bulk of the country's available trading interests in the exchange environment. This is important because trading markets exist to ensure that companies can raise capital and that the prices of the securities they sell are as accurate as possible. This, in turn, enables the efficient allocation of capital in the U.S. economy.

It is axiomatic that the more trading interests interaction in the centralized market or at least the market that is virtually centralized using technology, the more accurate prices will be. Historically, certain brokers have argued that internalization without significant price or size improvement is necessary to counter the immense market power of exchanges. Today, however, there are 13 exchanges scratching and clawing for market share, and no one exchange carries more than 20 percent market share. Exchanges can and would adopt pricing and rule structures that would be economically attractive to retail brokers and customers without lopping this important segment off from the wider market.

The SEC in early 2010 floated the idea of a Trade-At Rule, which would prohibit internalization without significant size or price improvement. We believe the United States should consider this seriously and other mechanisms that would maximize the interaction of orders in the secondary markets with the goal of optimizing price discovery and efficient capital allocation.

Another area that merits continued regulatory scrutiny is the reality that today's automated fragmented markets, although they deliver better outcomes for investors under normal circumstances, do not perform as well under stress as the more manual consolidated markets that preceded them.

In general, we think the SEC's focus on systemic risk issues in the fast-moving, highly automated, highly fragmented markets we now have has been well-placed, and the back burning of issues like internalization were appropriate steps at the time. However,

I think perhaps we have a little more time to examine some of these issues now.

Finally, of particular interest to this subcommittee is the quality of markets for small companies. We and other market participants have observed a divide in outcomes for large cap actively traded stocks and smaller issues. Small company shares may not be experiencing the efficiency and cost benefits that have accrued to bigger, more liquid stocks as a result of the 15-year market structure transformation I have discussed. We support experimentation by regulators and legislators to provide new incentives for making markets in the shares of smaller companies. The provision of the recently adopted JOBS Act requiring the SEC to study whether minimum price increments would improve market quality for emerging growth companies is one example of such measures.

Chairman GARRETT. I am going to ask you to wrap up there.

Mr. GAWRONSKI. Sure. In closing, I would like to reiterate that modern U.S. equity market structure is the creation of 15 years of back and forth between government regulation and market reaction to that regulation. It is far from perfect, and there are several aspects of it that merit further investigation and potential reforms, but it serves the investing public better than what preceded it. As a result, fundamental reforms like the ones that triggered the great market structure transformation back in 1997 should be considered only with the greatest of care. While market participants have proved quite adaptable, the market structure is, nevertheless, an ecosystem that functions well overall and changes need to be carefully considered, backed up by empirical data, and in most cases should be explored with pilot programs. Thank you.

[The prepared statement of Mr. Gawronski can be found on page 82 of the appendix.]

Chairman GARRETT. Thank you.

Good morning, Mr. Joyce. You are recognized.

**STATEMENT OF THOMAS M. JOYCE, CHAIRMAN AND CHIEF
EXECUTIVE OFFICER, KNIGHT CAPITAL GROUP, INC.**

Mr. JOYCE. Good morning, Mr. Chairman. Chairman Garrett, Ranking Member Waters, and members of the subcommittee, thank you for the opportunity to offer my testimony in connection with this very important hearing. Knight Capital Group opened for business in 1995. Built on the idea that the self-directed retail investor would desire a better, faster, and more reliable way to access the market, Knight began offering execution services to discount brokers. Today, Knight services some of the world's largest institution and financial services firms, providing superior trade executions in a cost-effective way for a wide spectrum of clients in multiple asset classes, including equities, fixed income, derivatives and currencies. In 2011, Knight executed more than 900 million trades and 1 trillion shares for more than \$6.4 trillion in notional value. The majority of the trades we execute today are on behalf of retail investors. We count amongst our clients some of the largest retail brokerage firms in the United States, including Scottrade, Ameritrade, and Fidelity. In addition, we service some of the largest institutional investors in the industry.

We have spent the last 17 years evolving our technology infrastructure so that we can process millions of trades a day on behalf of investors in a fast, reliable, cost-effective manner, while providing superior execution quality and service. This is all brought to bear in our endeavor to secure best execution on behalf of our customers. Importantly, access to this sophisticated gateway is available to nearly every investor in the country. We appreciate the opportunity to comment on the market structure issues which are the focus of the hearing, all of which revolve around the notions of execution quality, liquidity, fair access, and responsible rulemaking through rigorous cost-benefit analysis.

Make no mistake, the U.S. equity market is the best functioning and fairest market in the world. This has been achieved through fact-based decisions, prudent rulemaking, structural transparency, and timely and efficient disclosure, all of which are products of a competitive and fair market structure that allows choice and fosters innovation. Frankly, there has never been a better time to be an investor, large or small, in U.S. equities. Execution quality is at historically high levels while transaction costs are at historically low levels.

In 2010, we sponsored an academic study authored by three of the Nation's leading academic scholars: Jim Angel from Georgetown; Larry Harris of USC; and Chester Spatt from Carnegie Mellon. The study concluded that, "virtually every dimension of U.S. equity market quality is now better than ever: execution speeds have fallen; retail commissions have fallen substantially and continue to fall; bid-ask spreads have fallen substantially and remain low; market depth has marched steadily upward; and institutional transaction costs continue to be the lowest in the world." And the slides in our written testimony present evidence that these same metrics hold true today.

Investors have seen substantial improvement in execution quality over the last 5 to 7 years. In point of fact, one of the more notable things is price improvement. Over the last 2 years, over half a billion dollars of price improvement has been credited towards the retail investor, and that money flows into their pocketbooks and back into the economy. The facts show that investors have benefited greatly over the years as a direct result of the developments in market technologies. High-speed computers, dark pools, et cetera, are not the problem. Indeed, they are the culmination of our free market system, competition. This competition is what keeps the U.S. capital markets great. Market venues spend hundreds of millions of dollars a year in technology. We all look for new and improved ways to source and access liquidity in a most efficient fashion.

Access to all this liquidity and the gateway to the marketplace is available to the retail investor at no additional charge. We fully support this subcommittee's initiative to review the broad range of market developments which have helped shape our equity markets in recent years. Today, the equity markets offer more benefits to investors than at any time in history. Regulatory fine-tuning is necessary in a market as dynamic as the U.S. equities. However, as the renowned statistician William Edwards Deming once said, "In God we trust; all others must bring data."

Now, I would like to spend 1 minute talking about the so-called trade at proposal, which seems to raise its head every few years. For the last 25 years, the SEC has consistently rejected these proposals, noting that a competitive choice-driven market is far better for investors. Internalization is one such benefit for investors. Internalization is arguably the one great defense for the retail investor against the professional traders in the marketplace. We believe a Trade-At Rule would stifle innovation and set the U.S. equity markets back more than a decade.

We have some suggestions as to how we think the markets could evolve, not so much that they are not working properly, but perhaps for the benefit, if you will, for investor confidence. I would like to touch on a couple of them.

Access fees: They have been at the core of almost every debate that has taken place around the market structure in almost the last 2 decades. The so-called maker-taker model is an exchange that provides makers with a fee and takers pay a fee. We believe this has encouraged a large group of traders to trade with the only goal to collect those fees as opposed to true investing or intermediating. Therefore, we recommend the SEC take a hard look at that.

Second, we support the proposal to widen spreads for certain tiers of securities, including higher-priced stocks as well as less-liquid stocks. In that regard, Knight fully supports the tick size study recommended by Representative Schweikert that was included in Title 1, Section 106(b) of the JOBS Act.

Knight has previously proposed to the SEC that it consider adopting additional market-maker obligations. We believe market makers should be required to keep their quotes live for at least one second. In our view, this will restore a good deal of credibility to the posted quotes in the market and eliminate a lot of trading behavior that does not contribute meaningfully to the liquidity in the market.

So, in conclusion, Knight appreciates the constructive roles this committee and subcommittee have played in the oversight of the markets in the rulemaking process. Your oversight helps ensure that U.S. capital markets remain competitive and innovative, thus benefiting all investors. Competition and innovation spurred by insightful rule changes fostered by the SEC have resulted in dramatic improvement in market technologies and execution quality for the benefit of public investors. The U.S. equity markets are the most liquid and efficient in the world and have all performed exceedingly well over the last decade. Thank you for your interest in these issues and the opportunity to contribute to this debate.

[The prepared statement of Mr. Joyce can be found on page 91 of the appendix.]

Chairman GARRETT. Thank you, Mr. Joyce.

You are also welcome to the panel this morning, and you are recognized for 5 minutes. Good morning.

**STATEMENT OF DUNCAN NIEDERAUER, CHIEF EXECUTIVE
OFFICER, NYSE EURONEXT**

Mr. NIEDERAUER. Thank you, sir.

Chairman Garrett, Ranking Member Waters, and members of the subcommittee, I want to thank you for inviting me today. U.S.

equity market structure is an issue of the utmost importance to re-instilling confidence in markets, and we applaud you for holding today's hearing.

NYSE Euronext is a global exchange operator of several equities and derivatives exchanges in the United States and in Europe. This provides us with a unique vantage point from which to compare global securities markets and to learn from the experiences we accumulate by operating in these various jurisdictions. In most developed markets, there is one national stock exchange and a handful of competing platforms. However, in the United States there are hundreds of competing trading venues which include exchanges, dark pools, electronic communication networks, and broker-dealer-owned liquidity pools. On one hand, this competition has spurred tremendous innovation in the form of increased automation and speed of trading, greater reliability of trading systems, improved functionality, and lower transaction costs. Most importantly, the combination of regulatory change and competition has benefited at least some investors. However, these reforms have also had unintended negative consequences. The reforms created lower barriers to entry for new trading venues, some of which lacked price transparency. These alternative venues also operate under a less rigorous regulatory framework, and the result has been a dramatic rise in off-exchange trading.

Today, one-third of all equity trading takes place off exchange, and over 1,200 listed securities have more than 50 percent of their volume traded off exchange, an increase of nearly 150 percent in less than 2 years. As a result, we are rapidly approaching a bifurcated market structure in the United States. On one tier, regulated exchanges, such as the NYSE, serve as price makers. Price makers are critical to the price discovery process since they show the best available prices with associated share sizes for all securities. These quotes referred to as the national best bid and offer, or NBBO, are constantly changing with activity in the markets and are what established a reference price for nonexchanges and all other liquidity pools.

On the other tier, alternative trading venues are price matchers. They match willing buyers and sellers that participate in their venues but do not contribute to price discovery by displaying quotes to be included in the NBBO. That is, the off-exchange trading centers provide so-called undisplayed liquidity. Undisplayed liquidity can serve an important function for investors seeking to trade large blocks of securities. However, today the average trade size is similar in both exchange and nonexchange venues. Moreover, undisplayed trading currently accounts for a substantial volume of overall equity trading. We believe now is the time for policymakers to consider at what level does price discovery materially suffer.

A common argument made in support of the growth in off-exchange trading is that spreads have decreased as a result of heightened competition. However, the data clearly shows us that spread compression actually is the result of the move to decimalization in 2000, and since 2006, spreads actually are wider by nearly three basis points. That doesn't sound like much, but on an average price stock, that is a doubling of the spread since 2006. This tells us there has been a dilution of market quality to the detriment of in-

vestors, so do not be misled by charts that show you the trend since 2000. Dark pools had little volume in 2006. The markets were working fluidly, displayed liquidity was a more significant part of the market, and the spreads had already been tightened due to decimalization.

Thus, we believe there is good reason for Congress and the SEC to be concerned that without action, we risk greater loss of investor confidence and decreased market stability. To address the issue, we recommend that policymakers focus on establishing fairer and more transparent equity markets as well as a more level regulatory playing field among trading centers.

So, with that, I would respectfully recommend a number of solutions. First, promote public price discovery by requiring that internalizing firms simultaneously display a protected and accessible quote at the NBBO or provide meaningful price or size improvement versus the NBBO if not quoting. As I am sure the committee is aware, this was the primary recommendation of the joint committee that was passed to study the aftermath of the flash crash in 2010, yet this recommendation has not even been reviewed or considered.

Second, create an audit mechanism that can adequately surveil the consolidated market. This could be assigned to FINRA or to the SEC.

Third, enhance transparency by restoring dark pools to their original envisioned function of facilitating block transactions, i.e. have minimum trade sizes.

Fourth, level the competitive playing field between exchanges and nonexchanges by ensuring that we all must comply with the same standards concerning SEC filings, fair access, and market surveillance. In other words, make our rule proposals effective on filing or subject our competitors to our elongated approval processes.

Fifth, fairly distribute the cost of regulation across all exchanges and other liquidity pools. Our cost of regulation as a percentage of the cost of regulating the markets is exponentially greater than our market share.

Sixth, consider rule changes or pilot programs that would ease the burdens on smaller publicly traded companies and enhance their liquidity. These might include increasing the minimum price variation or tick size for smaller companies, perhaps letting each company choose their own, increasing the market cap threshold for Sarbanes-Oxley compliance from \$75 million to \$250 million, and allowing companies and exchanges to collaborate to develop and fund liquidity provision programs.

In closing, let me reiterate that while the U.S. capital markets are the best in the world, there is room for improvement which would benefit investors and market participants. Public confidence in the markets stems at least in part from leadership, and we need this leadership to come from Congress, the Administration, market participants, and exchanges working together to achieve a better market structure, restore investor confidence, and as Chairman Garrett said, make sure our markets remain the envy of the world. Thank you for allowing me to testify, and I look forward to your questions.

[The prepared statement of Mr. Niederauer can be found on page 125 of the appendix.]

Chairman GARRETT. Thank you very much.
Mr. Smith, you are now recognized.

**STATEMENT OF CAMERON SMITH, PRESIDENT, QUANTLAB
FINANCIAL**

Mr. SMITH. Good morning, Chairman Garrett, Ranking Member Waters, and members of the subcommittee. Thank you for inviting me to participate in today's hearing.

My name is Cameron Smith, and I am the president of Quantlab Financial, a Houston-based quantitative trading firm. Quantlab was founded in 1998, and we now employ more than 100 people. Our company operates in the United States and around the world. As you know, in recent years computer technology has shifted the marketplace to an open, competitive electronic environment. I would like to briefly discuss the current state of the U.S. equity market, the role we play, and then share a few suggestions for policymakers to consider.

In any discussion on market quality, perspective is needed. The United States has the world's leading equity market, and empirical studies show that investors have never enjoyed lower transaction costs. The United States has achieved this position by adhering to certain core values: fairness; transparency; and open competition.

So what does this all mean for investors? As Gus Sauter, who is the chief investment officer of Vanguard says, "Vanguard investors have enjoyed a 50 percent reduction in trading costs over the last decade." This means an investor saving for retirement over 30 years could see their balances in their account increase by 30 percent. So, this is real savings.

While the general trend of improving market quality is clear, there still remains a great deal of misunderstanding around the role of modern professional traders, sometimes referred to as high frequency traders. Markets have always had professional traders that bridge the temporary gaps between supply and demand, and today that role is both automated and highly competitive. It is no coincidence that as market quality has improved—the bid market quality has improved with these developments.

Empirical studies show that high frequency trading improves price discovery, reduces short-term volatility, and lowers investor transaction costs. However, we are here today because market quality can always be improved, and I would like to quickly provide four substantive ideas on that.

First, regulators should have easier access to all the data they need to oversee our markets and to ensure they operate with the highest integrity. In this regard, we support initiatives such as consolidated audit trails and large trader reporting. Further, we have encouraged the formation of industry working groups to offer technical assistance to regulators to fully utilize the richness of the data that electronic markets provide.

Second, we must continue to enhance broker-dealer risk management practices and market safeguards like circuit breakers or limit up/limit down protections. While the SEC and the exchanges have already implemented some of these protections, they need to be

calibrated and refined in response to experience in a variety of market conditions.

Third, policymakers and the industry must continue to monitor and consider ways to address the issue of market fragmentation. The challenge has long been to balance the benefits of competition against the complexities from fragmenting the market among too many trading venues. We must therefore ensure that regulations don't inadvertently contribute to fragmentation by hindering the ability of a public market to compete with the private markets, such as dark pools and internalization venues. In this regard, we support two relatively incremental initiatives. One would just be amending Reg NMS to allow markets with zero bid-ask spreads to be displayed. The second would be to allow exchanges to experiment with smaller tick sizes that will drive volumes and price discovery back to public markets.

Finally, I am sure that we all agree that policies must be shaped by facts established through rigorous data analysis rather than anecdotes, rumors or unsupported assertions. It is imperative that policymakers and industry together develop and specify common metrics that we can all refer to for accessing the current health of our markets, and we need to make these measures available through a publicly available dashboard, perhaps on a Web site so that anyone can track them.

Mr. Chairman, thank you for the opportunity to appear today, and I look forward to answering any of your questions.

[The prepared statement of Mr. Smith can be found on page 148 of the appendix.]

Chairman GARRETT. Thank you. And I thank the entire panel.

So, moving to questioning, I will first recognize myself for 5 minutes.

Just an observation from the six people on the panel is that one of the common themes is the benefits of competition and the necessity to try to achieve any regulatory reform to encourage additional competition in the marketplace. Another, a second take-away, and a couple of you made this point; Mr. Smith just did, and you had the comment earlier with regard to information and data. What was the statement? In God we trust; all others must provide data. So that was the other take-away that I took is that whatever we do here and also whatever the regulators eventually come up with as well should be data and factual driven and empirically driven as opposed to anecdotally driven or politically driven or otherwise. It should not be moved by simply just recent cases in the headlines and that sort of thing. So that is all good.

Let's take a look at a couple of things then, first, with regard to competition. In order to do that, the rule process that is currently in place for the lit exchanges, as we have heard, is time-consuming in certain cases. Cumbersome is another way to describe it. Now, that was supposed to be addressed, it was my understanding, in Dodd-Frank. That was supposed to be addressed with Section 915, I believe, of that law, to set what is sort of like a time limit on the rule process approval process, but now I understand that the way it is actually being implemented is that before the proverbial clock starts ticking, they ask for drafts and what have you, and that can take a long period of time. Does anyone want to comment on what

the existing process is, whether you are involved with it or not, and what we need to be doing in that area?

Mr. NIEDERAUER. Sure. Looking down the panel, I guess that one is mine. So as we have said before, I think we were optimistic, Mr. Chairman, that when the streamlining proposals that you are referring to were talked about and hopefully implemented, that they would work in practice the way they were written up. Regrettably, they have not worked in practice the way they were designed. So our frustration stems from the fact that we are all in favor of competition. We did not appear at the hearing today to talk about mitigating or eliminating competition. We would just like the opportunity to compete, too. And we feel that at the stage we are at as an exchange, we are able to innovate at the pace that many of our competitors are able to innovate, but we have one hurdle in our way that doesn't appear to be in the way of many with whom we compete, and that hurdle is because of our history, we are required to file a rule change every time we would like to implement one of these innovations, and many of the venues with whom we compete are not under a similar burden. So we would simply like that playing field leveled, and I think we would prefer to see it leveled by letting us innovate at their pace rather than slowing everyone else's pace of innovation down to our rulemaking process.

Chairman GARRETT. Let me just interpose and let the other members of the panel discuss that, and also when you discuss that, let's just also maybe throw in another aspect, the regulatory nature that we have of lit exchanges of the SRO model and that these are now for-profit entities and what have you, whether that changes anything from where we used to be, if you want to morph that into your answer. I see, Mr. Joyce, you were wanting to chime in?

Mr. JOYCE. Yes, Mr. Chairman. Obviously, we certainly respect the work the New York Stock Exchange has done, but I think when we talk about a level playing field, we need to keep in mind that an exchange is an exchange, and a broker-dealer is a broker-dealer. Exchanges have a certain rule set: They have to treat clients, for example, all the same; they don't commit capital. Broker-dealers can commit capital. We can commit capital at various degrees to various clients. We can preference some clients. We cannot do business with other clients. So I think we need to be careful when we talk about leveling the playing field. This is apples and oranges, dogs and cats. Similar but different. An exchange has certain responsibilities that are decidedly different than the responsibilities broker-dealers have. Just to point out one, for example, we have best execution responsibilities. When we take an order on behalf of a retail client, we have a certain fiduciary responsibility that is mandated by the SEC; an exchange does not have best execution responsibilities. So I completely agree that they should be allowed to compete in a more facile fashion. Having said that, let's not confuse the fact that an exchange is an exchange, and broker-dealers are broker-dealers.

Chairman GARRETT. Does anybody else want to chime in?

Mr. GAWRONSKI. We don't operate an exchange or a dark pool, so we are users of both of these systems, both of their products, in fact, and they are both good products. But I guess I tend to agree with Duncan on this one in that I don't think it is a level playing

field. When the Reg ATS and other rules were adopted, there wasn't competition in the markets, so that has brought on meaningful competition. It is cutthroat competition at this point, and I do feel that what ends up happening is that we end up with the sort of other side of the coin of competition is fragmentation, and we should limit that in some instances or at least make it so that if people are competing on a level playing field, I think you will probably see a little decrease in that fragmentation, and the SEC framed it pretty well at one point. They said their job with respect to market structure, at least one aspect of it, is to balance the competition among exchanges and market centers versus the competition among orders, and I think the competition among orders is suffering a little bit. We have gone, the pendulum maybe has swung a little bit too far and maybe we just need to—I don't think we need to make massive wholesale changes, I just think we need to look at leveling the playing field.

Mr. JOYCE. I would love to comment just a little bit more on the issue around the quality of the quote, the quality of the issues of fragmentation. I just think we should tread carefully. Again, there is not a scintilla of data to indicate that fragmentation is hurting investors. I think we have just heard six people say the markets have never been better. If we are going to address things like off-exchange trading, which, P.S., the reasons there are venues to trade off-exchange was to solve problems. Dark pools were originally set up to help institutional traders resolve the issue around accessing large pools, large orders, without displaying their issues into the marketplace, and if you will, a large institutional trader displays what they do in the marketplace, it can move a price. Very dangerous. Retail investors utilize internalization because they get instant prices, generally better than the NBBO, and they don't have to worry about issues like co-location, competing with professional traders, and market data issues. These things have been set up, and they have been solving problems and solving them well.

Chairman GARRETT. I thank you. I am over my time, Mr. Smith, so I will recognize the gentlelady from California.

Ms. WATERS. Thank you very much, Mr. Chairman. I did come in a little late, but there seems to be an overriding theme in the testimony that we are hearing today. Everybody agrees that we have the world's leading equity market: it is healthy; and the SEC is doing a great job. Is that what I heard? Let me go on to the questions.

Let me go to Mr. Joe Gawronski. You discuss how the Canadian government has already adapted a so-called Trade-At Rule requiring significant price improvement if a trade is going to be executed off an exchange. You said that Australia and Europe are considering adopting similar rules. Should the United States pursue such a rule? If so, why? And are broker-dealer conflicts of interest a problem when it comes to internalization?

Mr. GAWRONSKI. Sure. Thank you for the question. Yes, we do think the United States should consider a similar rule to what the Canadians have adopted. Of course, that is not live yet; I think it goes live in October. So I do sympathize or agree with a lot of the participants here that we need to be careful about big changes.

Just to be clear, and I think this has been mischaracterized in the press quite a bit actually, we are big users of dark pools, and we are not suggesting that all dark trading be eliminated. Off-exchange trading can be valuable. I tend to think, though, when the off-exchange trading looks very similar to on-exchange trading, meaning similar order size or similar pricing, I am not quite sure why it is allowed and we shouldn't push it into the publicly displayed markets.

So I think we should consider something. The Canadians have adopted this. I think the Australians probably will follow. Obviously, the genie is a little bit out of the bottle here so it is a little more difficult because it does affect people's business models. But I think if we do it in a way that is requiring significant size and/or price improvement, I think you will not see off-exchange trading go away. I just think you will limit it and reverse it a bit.

In terms of broker conflicts, yes, they are rampant. I am a broker, and I am embarrassed by what some of the people in my industry do. They put the rebate that they will receive or the lower cost fee ahead of best execution for the customer. So even though it will mean more regulation for me in terms of proving to the SEC or FINRA when they come in that we have done the best job for our customers, I welcome it because I know how we treat our customers. And I don't see that same type of resolve or commitment by the vast majority of the broker-dealers.

Ms. WATERS. Let me hear what Mr. Joyce and Mr. Cronin have to say about that.

Mr. CRONIN. Thank you. As an institutional investor and again representing ICI, we do have concerns about hidden liquidity in terms of internalization, and part of that is centering around the fact that these orders don't ever hit the lit markets, so the price discovery mechanism, that is where buyers and sellers interact, that not taking place could be detrimental. We recognize that there could be benefits to investors by price improvement that happens with internalization. Our point is that if the price improvement is a tenth of a cent, which is about 10 cents on 100 shares, we are not sure that the benefit outweighs the cost, which could be that those orders, if seen in the lit market, could do appreciably better or help the price formation process.

Of course, the other point is that as we look at this issue, there are complications around the Trade-At Rule. Most specifically, that the Trade-At Rule is unclear to us whether or not there would have to be a move to subpenny increments to really appropriately reflect bids and offers that have access fees within them. As an institution, I can promise you that we believe that moving to subpennies would be exceptionally disruptive for institutional investors. The minimum risk increment, as we described, at a penny is wonderful for some population of securities, the top hundred, two hundred names certainly, but there is a population of traders of stocks of issues that that penny increment doesn't seem to make a whole lot of sense, that is that the price formation, the process of trading the efficiency breaks down, so we would be very, very careful specifically about a trade issue.

Ms. WATERS. Mr. Joyce, how about you get a word in here before the time expires?

Mr. JOYCE. Thank you very much. With all due respect to our friends in Canada and Australia, there are more retail investors in the United States than there are people in those countries. So I think we have to make sure that we take pride in the fact that the United States has the best markets in the world, and we certainly want to follow best practices, but I think the lead on these issues should come from here, with the data-driven decisions and not be looking at smaller countries to lead the way for us.

Ms. WATERS. Thank you very much.

I yield back, Mr. Chairman.

Chairman GARRETT. Mr. Campbell from California.

Mr. CAMPBELL. Thank you, Mr. Chairman.

I heard you all talk a lot about trading costs, how they are down, and liquidity and how it is up and institutional investors and so forth. I would like to suggest that those are trees within the forest and not looking at the forest. And in spite of what you just indicated, Mr. Joyce, the forest to me is a couple of things.

First of all, that the public increasingly does not trust Wall Street and therefore does not trust you. And whether that is due to flash crash, dark pools, high frequency trading, MF Global, all of these things put together, that the public increasingly believes that there are a lot of big people doing funny things behind closed doors that they don't understand and can't control and that, therefore, they can't participate equitably in this game because it is not a fair or level playing field. That, to me, is not good. It is not good for the markets, and it is not good for America that we are disconnecting the public from public markets.

Second of all—and this is my own little metric—I always thought there were kind of four participants in markets and that there is investment, there is trading, there is speculating, and there is gambling, and that those things all go on. The gambling, speculation, and trading have been on a dramatic increase of late and that investment is almost disappearing. And that is not good for markets, for America, or, in my view, for capital formation.

Because if you are on the other end of this and you have a company—and we talk about IPOs and all that sort of stuff, you want investors. You really don't want traders, you really don't want speculators, and you don't want gamblers. But there are lots of them out there. They are moving the markets, moving them around, and fewer investors.

That is my perspective, and that is what I think we should be talking and focusing more on. And if that means, in my view, that the cost of trades go up a bit, I will exchange that all day long for a market that has more investment and more connection with the public and less domination by a very few people behind closed doors and so forth.

In the remaining time, I would love to hear your reaction; and if any of you think I am completely full of garbage, feel free to say so. People up here on the panel have no problem doing that.

Chairman GARRETT. We will give you extra time.

Mr. CAMPBELL. The chairman is particularly adept at that. So feel free to do so or to give comments.

Mr. NIEDERAUER. I would love to start. Thank you for your comment, Congressman. Because I don't know what your colleagues

think of you, but that is my first impression of you, and that is why I think we are actually all here today, right?

We can still be proud of what we have in the equity markets, and you heard a lot of positive comments about some innovations that have helped a lot in the last decade. But, ultimately, whatever we have done, to sit up here and say, oh, it is all fine, let's not tamper with it because it is working great—the public has never been more disconnected, the public has never had less confidence in the underlying mechanism, and that is why in my closing remarks I talked about the need for all of us to work together. Because that is the root issue, right?

We are not going to be able to be the group that prevents crises from happening. They have happened throughout the country's history, right? But at the end of the day, the citizenry has lost trust and confidence in the underlying mechanism, and it is for some of the reasons you talked about. What used to be an investor's market is now thought of as a trader's market, and I think we have convinced ourselves along the way that speed is synonymous with market quality. In some cases, it might be; and in other cases, it clearly isn't.

So I think your comment speaks at the heart of why we are here. Because to say we should just leave it alone because it is working great, when people have never had less confidence in what is going on, I think is a call to action. So I appreciate your comment.

Mr. CAMPBELL. Thank you.

Let me just on that, whichever one of you said we ought to hold the price for a second—yes, Mr. Joyce—when you talk to people out there who want to invest 5 years, 10 years, whatever, invest, and you say you have to hold prices for a second because most of the time people trade in and out in 30 milliseconds, understandably, they have absolutely no faith in this thing.

So, Mr. Cronin, he had his hand up first. I am sorry. It appears I am out of time. But go ahead.

Mr. CRONIN. I appreciate the opportunity to quickly say that we understand entirely your point. As I suggested, in representing ICI, we have \$13 billion in assets and 90 million of those investors whom you reference. Our interest is clearly that investor confidence is well-placed in this market. And while we recognize there are some benefits that recent developments have made, there is clearly still work to be done, including things, as we discussed, around regulatory capabilities to ensure that any activity that is nefarious or improper or manipulative is able to be seen, spotted, and prosecuted.

Mr. CAMPBELL. Mr. Chairman, my time is up, so I will defer to you on what happens now.

Chairman GARRETT. The gentleman yields back.

Mr. CAMPBELL. Then, I will yield back.

Chairman GARRETT. The gentlelady from New York.

Mrs. MALONEY. Thank you, Mr. Chairman, for having this hearing, and I thank all the panelists for being here.

I would like to focus on the growing percentage of the market of these dark pools, which seems to be the exact opposite of what we are trying to achieve in Dodd-Frank: making our markets more transparent, putting them on exchanges, letting everyone know

what is going on. And this seems to be growing. So I would like to know what percentage exactly of the market are these dark pools and why are they growing? Why are they making up more and more of the market? I would like to understand more of it. I would like to start at this end and go down, if people would like to comment on it. Mr. Smith?

And then, I would like to know what is the impact that they are having of not really being transparent or on exchanges and why is this segment of the market growing and what is the impact it is having on competitiveness of our markets?

Mr. SMITH. Okay. That is a good question. It is definitely something we should be focused on.

I, too, am concerned about the fragmentation and support a goal of trying to reduce it and try to consolidate the markets. The markets have splintered over the last decade or so. They have gone from a couple of centralized markets that had the majority of the market share to, as we heard today, dozens of markets where the trading volume is spread all out.

Mrs. MALONEY. Do you have a sense of how much of the market it is?

Mr. SMITH. I will have to defer to Duncan on that, who has a staff who probably looks at that.

Mr. GAWRONSKI. I am known as the dark pool boy in this world, so I will do the data.

About 14 to 15 percent of the market is what we would characterize as dark pools, but you actually have to about double that figure to almost a third of the market when you include things other people would call internalization or wholesaling activity. So about two-thirds of the market is on exchange, and about one-third of the market is off exchange.

Mrs. MALONEY. How would you define a dark pool? Not being on the market?

Mr. GAWRONSKI. There is no quote displayed. Like when you see a bid and offer on the New York Stock Exchange or NASDAQ, you would not see a quote. As Duncan talked about—

Mrs. MALONEY. Are they regulated by the CFTC?

Mr. GAWRONSKI. No, by the SEC.

Mrs. MALONEY. By the SEC.

Mr. GAWRONSKI. Yes, although there is this different rule book in the sense that some of them are broker-dealers and not ATSs, and so therefore FINRA could also be the primary regulatory body.

Mrs. MALONEY. Why is it growing as a percentage of the market?

Mr. GAWRONSKI. I think there are a couple of reasons. One is the fee differentials that exist between some of the dark pool markets and the displayed markets. Another reason is some of the things that you were talking about in terms of the sort of fast world we live in. There is some arbitrage activity between the displayed market pricing and what is happening in the dark pools. Someone can maybe buy at the midpoint in a dark pool and sell in a displayed market, capturing that differential in time. So I think a lot of it is driven by those types of things.

And I think institutional investors do seek refuge in dark pools in terms of doing blocks. But the reality is most of the activity in dark pools is not blocks anymore. That is my problem with it, is

that I would like to reserve it to situations where either blocks are getting done or significant price improvement is being achieved.

Mrs. MALONEY. See, I don't understand how they do not have to do a quote display and be more visible. Because that was the total goal, to put people on exchanges in Dodd-Frank. How is this happening that they are being excluded from the effort to put quotes out there, increase competition. Any answer?

Mr. JOYCE. Yes, Congresswoman. First of all, I think they started because they saw the problem in the marketplace where there were institutions trying to access liquidity or retail investors trying to get protection. But, fundamentally, they were to protect investors.

And you shouldn't think that the prices are—it is some kind of Wild West. The prices are dictated by the NBBO. They cannot trade away from the stated price. So they basically fundamentally solve problems that investors had. That is why they were created. Somebody came up with an idea to deal with an issue, and a dark pool was created, and they enhanced competition.

Mrs. MALONEY. How are they increasing competition? You say they are or they are not?

Mr. JOYCE. They are increasing competition because people are competing. They come up with new, clever ideas that serve investors' needs.

Mrs. MALONEY. Why have the spreads decreased in recent years? Dark pools have suggested that the tightening of bid-ask spreads is at least partially a function of the emergence of new dark liquidity venues. Could you comment on that?

Mr. JOYCE. I think the fact that the spreads are tighter, tighter spreads make it cheaper to trade. So that is a net benefit.

Mrs. MALONEY. My time is up. Thank you.

Chairman GARRETT. And I see Mr. Hurt as joined us. He is recognized for 5 minutes.

Mr. HURT. My question is for Mr. Joyce and Mr. Niederauer.

As the trading rules and regulations deal with or have affected small and mid-cap companies, perhaps in a disproportionate way, I was wondering if you could each talk just generally about what the solution is or how it is that we can increase the—make it easier for the smaller and mid-cap companies to access capital in the current structure?

Maybe Mr. Joyce, or whoever wants to go first.

Mr. JOYCE. I think the small and mid-cap companies by definition trade differently because there is just simply less of a flow. They have fewer investors. So they just behave differently, if you will, because of the structure of how they have been set up.

I think in order to introduce more interest in the area, you have seen over the years a diminution of research coverage on the small and mid-cap names because of certain rule sets that have been introduced to the marketplace. I think any of the policies that have been pursued, including the JOBS Act where we can encourage more research, would be a wonderful thing. We also think the opportunity to widen spreads so that liquidity aggregates in places that people can more visibly see, as opposed to having to trade in penny spreads all the time in some cases, is probably another net benefit.

So I believe that more sunlight in the form of research, the ability, if you will, for market makers to sponsor some of these small and mid-cap names. For example, we have about 80 percent market share in the bulletin board and pink sheet names, which is the real, if you will, micro-cap names. We don't have that market share because we wanted it. We have that because people, other competitors, backed away from it. So any way you can incent people in the form of even sponsoring market-making opportunities in these names would be helpful.

Mr. HURT. Thank you.

Mr. NIEDERAUER. And I would echo some of that, Congressman. I think the JOBS Act was a great start, and I think our next challenge now collectively should be how do we reconcile some of the opportunities that the JOBS Act promised us to deliver to small companies that are not yet in the capital markets with the SMEs that already are, who as you probably heard us say before we think are overly burdened by some earlier regulations. And I think whether we try things like Mr. Joyce just recommended or that ICI recommended, we would be very much in favor of experimenting with allowing companies to select their own tick size. Ultimately, you could argue that could be their decision.

We have studied internally what we think it would take for us to implement something like that. I don't think the implementation process would be long, although, obviously, all the industry participants would have to code their systems accordingly as well.

And I think we are very much in favor of what Congressman Schweikert and others have recommended in terms of experimenting with some kind of liquidity provision program. Because I think if we don't do that combination of things, we do run a risk that, even though we don't intend for that to be the outcome, the good news is we get a lot of small companies to market and they access the growth capital that creates the jobs we desperately need. The other news is, once they get there, they run the risk of being orphaned from a research coverage and liquidity provision point of view.

So I think we would be very, very interested in working with the industry and with all of you to figure out ways we can improve the situation for some of these SMEs that are already on the public markets. Because we think that is the future of the country in terms of job creation.

Mr. HURT. With respect to the JOBS Act, at what point do you think we will have concrete results that we can say are a consequence of the action that we have taken here in Washington? At what point will we be able to really judge the effectiveness of that Act?

Mr. NIEDERAUER. Assuming that it gets implemented by the regulatory authorities in the time which you have asked them to implement it, I would be very optimistic that we would be able to share results with you as early as next year. I can tell you that we are in conversations with—just our exchange is already in active conversations with 50 to 100 companies by my estimate, and I can honestly tell you I don't think we would be having the conversation with them about accessing the capital markets if it were not for the

JOBS Act. So I think the early returns are already very, very positive.

Mr. HURT. Thank you. I yield back my time.

Chairman GARRETT. Thank you. The gentleman yields back.

Mr. Green?

Mr. GREEN. Thank you, Mr. Chairman, and I thank the witnesses for appearing.

I want to speak to you very briefly about a couple of things. Let's start with the ability to arbitrage. Do you agree that this is a good or a bad thing, the ability to arbitrage in the marketplace? Who would like to respond?

Mr. JOYCE. I am happy to do it, Congressman.

I think it is a good thing. Because I think for a really healthy marketplace, you need a variety—sometimes a wide variety—of market participants. You need the retail investor, the long-term investor, the institutional investor, the intermediaries, the arbitrageurs. I think if you want to have a healthy, vibrant market, you need a broad spectrum of participants. And arbitrageurs, while they take up a niche in the market, they do benefit the marketplace.

Mr. GREEN. Is there anyone who differs?

Talk to me for just a moment about hedging. As you know, this has been in the news lately. And I don't want to get you involved in somebody else's debate, but I think it is a great opportunity for me to hear from some other folks about hedging and how it benefits the market. I would like to hear your pros and cons, if you would, on hedging.

Who would like to be the first?

Mr. CRONIN. I guess what I would say, as it pertains to the ICI, is we are not here to testify on behalf of what the banks are doing on their balance sheets and that sort of thing. But in the world of trading, risk management is an important component, so the ability for our contemporaries and counterparts, Morgan Stanley, Merrill Lynch, et al, to hedge risk, is an important feature of us finding liquidity. If we wanted to sell a large position of stock to them, they would take it in their inventory with their own capital and try to hedge the risk of that position using a number of different derivative contracts.

So in the context of, at least for us, finding liquidity in the markets, hedging and the ability for our counterparts to hedge risk is an important notion.

Mr. GREEN. Because time is of the essence, I will go next to my final point, which is, given that we appreciate hedging and we appreciate the ability to arbitrage, some contend that there is a thin line of distinction between these two and a highly technical term known as gambling. Can someone give me an opinion as to when you cross that line and you no longer are hedging but you are now moving into another arena?

I don't mean to make you uncomfortable. I am reading body language. If this is something you don't feel comfortable talking about, I suppose I will understand, but since you are experts, maybe someone can help me understand. When is it that you cross the line and it becomes Las Vegas in the investment market?

Mr. COLEMAN. I think, generally speaking, hedging is meant to decrease your risk and gambling is often to increase your risk.

Mr. GREEN. Is it possible for the structure of the actual product that you produce to become more of a gamble than a risk?

Mr. COLEMAN. I would say, not in our business line.

Mr. GREEN. Not in yours.

Let's not talk about anybody individually. What I am trying to speak for will be people who invest in these markets. So don't let this become personal, please.

But just help me to understand, do we have this thing called gambling taking place? And, if so, I would like for somebody to address it.

Mr. JOYCE. If I could, I will take a shot at it, Congressman.

I don't know if you can ever quantify a term like gambling that you have used, and this is probably not a very official answer or a very concise answer, but I think it is kind of in the eye of the beholder. Your view or somebody's view of gambling might be somebody else's view of a healthy intermediary doing his job or her job. So I hate to have—I don't want to sound like I am vacillating, but I believe applying the term "gambling" to components of the investment world basically defaults back to, it is in the eye of the beholder.

Mr. GREEN. Okay. Let me just give you a quick example of something. I don't know that I can do it in 25 seconds, but, some time ago, there was something known as the numbers racket. You may not have heard of it. But in the numbers racket, when one runner had a big hit on a given number, usually 7 or 11—for some reason these are popular numbers—he would go to another number runner and say, "Look, I have a big run on 7. I will give you \$10,000 if you will cover all of my losses above a certain amount if 7 hits." And if 7 hits, then that person would cover.

As it turns out, that was kind of a credit default swap. Now, those people who were doing that went to jail. But if you can go to one of our Ivy League institutions and get a great amount of credibility, you can go into the stock market and bring these innovations, and these innovations are embraced, and they become a good way to do business.

So I am just trying to get a better sense of when is it that these innovations that at one time were not received warmly became so enthusiastically embraced? What happens so that you can cross that line with these things and have this kind of circumstance?

My time is up. Thank you very much. You have been wonderful.

Thank you, Mr. Chairman.

Chairman GARRETT. Okay. It looks like everyone wanted to answer that question, but time is up.

The gentleman from Texas is recognized.

Mr. NEUGEBAUER. Thank you, Mr. Chairman. I think this is a very important hearing, and I think the fact we have a very diverse panel here is healthy.

I think one of the things—I heard Mr. Campbell make his comments earlier about how the little guy probably feels a little bit disenfranchised sometimes, that he sees other people making money by investing and he is maybe not doing so well. And I think as policymakers, one of the things we have to be careful about here

is that I have seen since I have been in Congress that sometimes Congress is trying to make markets where nobody ever loses any money, and that is not the role of Congress.

The role of Congress is for transparency and integrity of the markets. That is our goal.

One of the things that we have seen is with technology is a lot of innovation in almost every area of business and finance, and particularly in the finance area, which has created some new opportunities and some new efficiencies in the market.

So when I was kind of listening to Mr. Niederauer—you would think somebody with the name “Neugebauer” would be able to say that. So how about if I just call you “Duncan” and you call me “Randy?”

But I think the question is—I heard you say the competition is healthy, the efficiency that is created by the technology and all of that—hopefully, everybody is invested, whether you are a small investor or big investor. It is how we manage this new competition, these new outlets, and are we doing it in a proper way. Would you kind of expand on that just a little bit?

Mr. NIEDERAUER. So, with your permission, I will call you “Randy,” rather than “Congressman,” and we will call it even.

Mr. NEUGEBAUER. That is great.

Mr. NIEDERAUER. Thanks, Randy.

So it goes back to what several of your peers on the committee have talked about, in my opinion. So it goes back to Congressman Campbell’s comment about the little guy feels disenfranchised, whether we are proud of the market structure or not. So if the customer is always right, that is the customer, that is who we are supposed to be serving.

It goes back to Congresswoman Maloney’s comment about the increasing opacity in the U.S. equity market is hard to reconcile with what we think we have learned in the crisis, that the products that got us in trouble were pretty opaque, right? It wasn’t the transparent markets that got us in trouble. It was the opaque markets. So I think competition is a good thing, and let’s start with figuring out how to try to measure its impact.

I will help the committee with one thing. We can all bring you mountains of data. I guarantee you the data will be inconclusive. We can prove one thing. Mr. Joyce can prove another thing. Mr. Cronin can prove another. We can all prove different things from the data. It will be inconclusive.

So at the end of the day, we are obliged to figure out if we think we have a policy or a confidence issue or we don’t, because the data—we are going to take a lot of time gathering data, and I am not sure—we were going to draw very different conclusions from it.

I want to be very clear. My statements earlier—we don’t think there is anything nefarious going on in the equity markets. The broker-dealers are simply executing in a way that is consistent with the rules they are given. And in fairness to them, if internalizing is better economics for them, less regulation, why wouldn’t they execute there, right? Why not?

Now, I do disagree with one thing my friend, Mr. Joyce, said. If it were as simple as a broker-dealer were a broker-dealer and an exchange were an exchange, we are all for that. That is okay with

us. That is how it was, historically. What has changed in the last 5 to 10 years is broker-dealers can own things that look a heck of a lot like an exchange; and we certainly can't own anything, nor are we asking to, that looks a heck of a lot like a broker-dealer. So that is point number one.

My final point, point number two, is I want to be very, very clear, if the size that is getting executed in a dark pool is much bigger than we can provide in the public market, or if the price is better, we don't have a leg to stand on. That is called competition.

But if you think about what the dark pools were envisioned to do, where it was about institutional customers like Mr. Cronin needing to find an alternative to the public market because the public market was not serving them properly, that was fine if the average order size was still large in the dark pools. The data that I have is, for the top five dark pools, the average execution size is half of what we typically display in the public market. I don't get how that is serving anybody. That is just making the markets more opaque, with no benefit to the end customer.

Thank you, sir.

I left you 12 seconds. Oh, I went over 12 seconds. Sorry.

Mr. NEUGEBAUER. With the chairman's indulgence, to be fair here, Mr. Joyce, if I am a little investor and I am trying to move 100 shares and there is an institutional investor out there that needs liquidity or something and they are trying to move 200,000 or 500,000 shares, does the dark area provide me some protection in—one of the things, I guess, do I want to be in front of that trade or on the back of that trade in a normal exchange trade?

Mr. JOYCE. We believe firmly that internalization is a huge benefit for the retail investor because we give instant execution at the price quoted, generally at a better price quoted.

If I could just add one more thing in regard to the disenfranchised little guy, I think we need to understand again that there are many, many different people participating, many different types of investors in the market. A retail investor should not and I think cannot, worry about a 15-second time horizon in their investment; and if they get upset if they miss by a penny—and, of course, all the market data says they are doing better than that—but if they get upset and they miss by a penny and they run away from the market, they have missed the opportunity to—in the last 24 hours, I think Hershey has hit an all-time high, Costco has hit an all-time high, McDonald's is near an all-time high. These are household names.

So we need to work on the education component of this, too. There are different people with different time horizons. If you are in there for the long term and you are not getting frustrated, which can happen, there are plenty of opportunities out there to build wealth.

Mr. NEUGEBAUER. Thank you.

Chairman GARRETT. Thank you.

And Mr. Stivers is here and is recognized for 5 minutes.

Mr. STIVERS. Thank you, Mr. Chairman.

My first question is for Mr. Niederauer. The purpose or the benefit of an exchange to the entire system is to provide price trans-

parency to the entire market, is that correct? That is one of the benefits.

Mr. NIEDERAUER. That is what we aspire to do, yes, sir.

Mr. STIVERS. And even if shares are traded in dark markets, the exchanges provide sort of goalposts or left and right limits for people throughout the markets to know what the alternative price would have been, is that correct?

Mr. NIEDERAUER. The public market quote that I referenced in my opening—in my oral remarks, the so-called NBBO, is typically used as a reference price for those opaque markets, yes, sir.

Mr. STIVERS. So I guess the beginning point here is that, even though there is some opacity on the part of the markets, the exchanges are there to help everybody understand what the alternative price would be, and so it is very publicly known what the alternative would be. Is that correct or incorrect?

Mr. NIEDERAUER. Yes. We actually have an obligation to publish that bid and offer at all times with an associated size. So, yes, sir, that is correct. And we think that if the customer experience was better in the dark pools, as I alluded to a minute ago, then there is no argument, from our point of view. When it is clearly better for the executing broker but it is less clear that it is better for the customer, that is the only issue we have, really.

Mr. STIVERS. Can you help me understand, from your perspective on the New York Stock Exchange, what have your volumes been over the last couple of years? Has this rise in dark markets been at your expense in volumes? I thought your volumes were continuing to go up.

Mr. NIEDERAUER. Until the last 6 months of the markets—or really the first 6 months of this year, when we all see for all of us in the business the volumes are lower, which I think gets to the confidence issue, potentially, volumes in the overall market have gone up. That was a pretty steady increase after decimalization; and with the advent of some of the technologically enabled trading strategies, volume has generally increased.

If you want to measure it by market share, the market share has gone down in the transparent exchanges at the expense of the opaque venues the last couple of years. And in the last 6 months, I think volume is down for everybody relative to the last few years.

Mr. STIVERS. But is there anybody on the panel—and you can just raise your hand on this one if you disagree with this—who believes that the dark markets have actually done anything to reduce the efficiency of the marketplace or reduce liquidity in the marketplace? They have increased liquidity for sure, right?

Mr. NIEDERAUER. Yes, I think competition generally increases liquidity. I think we focus more to the first part of your question about how much of that is displayed. Because the regulations that we put in place—let's put decimalization aside. That was for a different reason, and that was really why spreads went lower and volume went up. It was the advent of NMS 6 or 7 years ago that was designed and hoped to encourage the display of liquidity, in addition to fostering competition. I think it certainly fostered competition. I am not sure it led to more display of liquidity.

Mr. CRONIN. Can I just comment from an institutional perspective on that as we talk?

Mr. STIVERS. Go ahead.

Mr. CRONIN. Institutions obviously represent retail investors; and whether it is the self-directed guy who is buying 100 shares with Tom's firm or somebody who invests in a mutual fund, they both deserve the same positive outcome.

So from an institutional perspective, when we have a big order—maybe it is 500,000 shares, maybe it is 5 million shares—there has to be a recognition that when we take that order to the market, there are a number of participants, probably including some on this panel, who would like to know about that order and could take advantage of it. So we need to be able to protect those orders.

Dark pools, as originally conceived, were ways that we could go into the dark, interact with other large intermediaries and get big-sized trades done.

Now, clearly, the market—

Mr. STIVERS. I do need to get to one more question. I hate to cut you off. I really apologize, but I am limited on time.

The other thing I would like to quickly discuss is, I worked in a broker-dealer a long time ago and the whole rise of market makers—and a lot of this was for the small issuers. So I do want to talk about the impact on small issuers of the rise of dark markets. And I know on a lot of the exchanges, including the New York Stock Exchange, you have to meet certain qualifications to get listed.

I am out of time, but maybe there will be a second round of questions where we can talk about the impact. I know it has come up a little bit on small issuers.

Thanks, Mr. Chairman. I yield back. Hopefully, there will be a second round.

Chairman GARRETT. Thank you. The gentleman yields back.

The gentleman from Arizona is recognized.

Mr. SCHWEIKERT. Thank you, Mr. Chairman.

Sorry to run out on that. We had something that affected Arizona—

Forgive me if you have now gone into this in great depth, but, first off, tell me the pros and cons, and if you would even have a brilliant mechanical way you would do it of smaller capped companies, thinly traded. Would you allow them to choose or participate in choosing their tick size?

Let's start from one end, and tell me good or bad.

Mr. COLEMAN. I think our preference would be the exchange to decide or something along those lines. We would be flexible to changing tick size and seeing what impact we have, so we are not opposed to it. But I think an exchange is probably better situated to get the tick size right for everybody involved.

Mr. CRONIN. I don't know that we would be too prescriptive on who exactly should set those. The only thing I would say is it seems like the exchanges and even investors would be in a better position than necessarily the issuing companies to determine what that tick size should be.

Mr. GAWRONSKI. I agree with Kevin.

Mr. SCHWEIKERT. Oh, that makes it easy.

Mr. JOYCE. I am not sure how much time management of these smaller companies think about tick size, but I am all for choice,

and if they think it would be beneficial to the way their company trades with the data that they collect, then I am all for choice.

Mr. NIEDERAUER. We did touch on some of this while you had to step out, and I think there was general consensus that that is directionally correct. It is consistent with all the things we have talked about in the past of what can we do generally for the SMEs that are already listed to enhance their liquidity.

We talked about liquidity provider programs. We talked about choosing their tick sizes. I mentioned in some of my earlier remarks that I think it would be—we shouldn't have so many different ones that it confuses the marketplace. But I think they are fairly easy to implement. We could do it with the companies. We would report it to the market participants. I think it is a pretty easy job for everybody to change their underlying systems to deal with different tick sizes.

So we talked about a range of things, all targeted to enhance liquidity for the small companies.

Mr. SMITH. I think investors, since they are the ones who own the securities, have the most interest in having the appropriate tick size. So I don't think that having issuers select them on behalf of somebody who owns that stock makes a lot of sense.

In terms of tick sizes in general, I think we need to calibrate them. So there is no reason, for instance, that Berkshire Hathaway should have the tick size as some \$5, very actively traded stock. And I think in Europe, for instance, they have different tick sizes based on the value of the stock; and optimally you probably would like to do it with the value and the liquidity of the stock taken into consideration.

So I think there is some calibration that could be done on that, both reducing tick sizes because of a lower investor transaction cost and potentially even increasing them in the appropriate circumstance as well.

Mr. SCHWEIKERT. We end up in the discussion about increasing the tick size, particularly for the very thinly traded stocks. But many of us—and we have had this testimony here—is the crisis, as you may see, since Sarbanes-Oxley, we have almost one-third fewer publicly traded companies today. Does monkeying with something of this nature make it more possible with the new Reg A and some of the other mechanics out there to have the next sort of generation of publicly traded companies come to market, does it work? Are we talking about something that actually would provide liquidity?

Mr. Smith, are we—and this is for not companies that are already listed, but for the next generation, particularly the small players. Would this help bring them?

Mr. SMITH. Certainly, I tend to favor the calibrated tick size approach, but, at the same time, I always favor innovation. So to the extent that one of the exchanges wants to experiment with having even a bigger tick size for some small cap companies or some up-and-coming companies and they want to have a pilot to do that, I would be supportive of that as well.

Mr. NIEDERAUER. I strongly agree with your statement.

If you think about what the root of the work on the JOBS Act and Reg A was all about, it was to open the door for that next wave

of entrepreneurial companies to find their way to the growth capital that the capital markets provide, Congressman. And I think what we have been talking about today is what else can we do for them as they are arriving or when they get there.

Mr. SCHWEIKERT. I know we are up against time, but that is what we are in many ways hungry for, is what else should we be doing to get those companies out there.

Mr. NIEDERAUER. Right. And I think the on-ramp is a great start. I think we talked earlier about reconciling that for the already listed companies. We talked about liquidity provision programs, which I know you have championed, and incentives for a research provision as well. So we are going to keep brainstorming on that, and I think tick size is just one of many things we can do to try to make sure we encourage that next round of entrepreneurial companies to come to the market.

Mr. SCHWEIKERT. I am now out of time, but please give us your ideas.

Thank you, Mr. Chairman.

Chairman GARRETT. And I thank you.

The gentlelady from New York is recognized.

Dr. HAYWORTH. Thank you, Mr. Chairman.

It was just mentioned again, the support for a pilot project to see how we can enable liquidity of small cap stocks to access capital more effectively and get investors more easily into that mix as well. Maybe we could just talk about some parameters for a pilot project, if we were to do them, so that we can get some guidance here on the committee.

I am getting the sense that there could be a lot of flexibility, I presume facilitated by technology, to experiment with flexibility for tick sizes. Is there broad support for that being an element of a pilot project?

Mr. Niederauer?

Mr. NIEDERAUER. I think it probably would be. We can follow up as panelists with other people in the industry. I think if you listen to the different recommendations that are being made, one approach is to tie it more to basis points and just have it naturally be a function of the price of the underlying stock.

I think that is going to be inadequate from the standpoint of a lot of the small companies, because their concern is less about their spread but the underlying liquidity in their stock. So I think just doing the same spread for every stock that trades at \$25, I am not sure that is going to get at the answer.

I do think that with all the technology that has been brought to bear that you have heard a lot about today on the panel, it is pretty trivial for a lot of us to figure out how to put a pilot program in place and to be able to study it. And before we get too nervous about it, it is an unfortunate but true fact that Congressman Schweikert shared. There are only a few thousand publicly traded companies in the United States, and this is an issue that is probably relevant to a fraction of those few thousand.

So I think if you can let us go to work and work together and figure out where we don't make it too complex but we get at the right answer, I think that is a great follow-up that we can all work on together.

Mr. JOYCE. If I can just add one thing, I think we need to be careful we don't get too caught up in the technicalities of how they trade. Let's face it. If you are a small company, you want to build momentum. You want to build enthusiasm for what are doing. You want to get your story out in the marketplace.

So, as such, I think you should investigate things like allowing companies to sponsor market makers to actually make markets in their stock. As I said earlier, we have like 80 percent market share in the bulletin board and pink sheet names. Not because we wanted it—we are happy to have it—but because a lot of our competitors faded and walked away from it because it wasn't profitable enough.

We also need to get the research story out there. You need to think about ways where you can publish research in a professional fashion and have the research analyst still work with the investment banker as they bring the company out.

So I think we certainly have to look at the technicalities of trading, but let's make sure we give these companies a chance to tell their story.

Dr. HAYWORTH. Mr. McHenry can obviously nod assent or not, but I think what you are talking about, Mr. Joyce, sits right in with the legislation you have introduced, does it not, Mr. McHenry? That is exactly what we are talking about.

Mr. JOYCE. Yes, we are in violent agreement.

Dr. HAYWORTH. Right. It sounds like common sense. Because, as I understand it, the regret that people have expressed about switching to decimalization is that the markets providing for that kind of dissemination of research and the investment of time into that research was severely compromised by changing the tick size.

Who should be—which entities should be the ones to be most heavily involved in a pilot project? Who should provide the overarching supervision? I don't know, Mr. Niederauer, if you have a—

Mr. NIEDERAUER. I was hoping that the other panelists would volunteer us, because it is always easier to be volunteered than to volunteer.

I think we would have to take the lead on it with the other exchanges, and I would like to start by working closely with the issuers. So I think that would be step one.

But I think we have to dampen the issuers' enthusiasm a bit. Because as Tom and Kevin and Cameron have all said, the investor should have some say in this, too. We don't want to just hit the target on one thing and create another problem for ourselves somewhere else.

But I think we could take responsibility for starting and beginning by working with the issuers whom we know care deeply about this, see if we can get as far as implementing some rules that let them choose it and calibrate it properly, and then make sure before we launch it that the investors are okay with it as well.

I think you have heard Mr. Cronin express from ICT's point of view, that you guys would be okay with the pilot, subject to the details, right?

Mr. CRONIN. Yes, we would definitely support a pilot program.

And if I can just give you some perspective, as investors, one of the things that we look at when we invest in companies clearly be-

yond growth opportunities and the industry they are in and that sort of thing is the liquidity. So the more things that we can do to enhance the liquidity and participation, the better.

We quite clearly are supportive from an ICI perspective of trying this pilot program with traditional tick sizes being moved from a penny to—if it is 5 cents, if it is more than that, we are completely open. But we certainly would have all kinds of interest—Duncan, thank you for offering—of being very involved in that process. Because at the end of the day, it is our investors' money that you are looking to really get more engaged in this. And one of the prices for admission for that is just more transparency, better liquidity; and I think the pilot program can help get us to a better place for that.

Dr. HAYWORTH. I appreciate that. Thank you.

My time is up. I yield back.

Chairman GARRETT. And we move from the gentlelady from New York to the gentleman from New York.

Mr. GRIMM. Thank you, Mr. Chairman.

Good afternoon to everyone on the panel. I appreciate your input today.

Being a New Yorker, I am very interested in how our exchanges are working. I think that, overall, we have had an explosion in spreads tightening and better executions over the last several years.

But I want to go back to something Mr. Niederauer said before. You were mentioning when my colleague from New York, Ms. Hayworth, talked about the company being concerned about—they are less concerned about the spread and they are more concerned about liquidity. But when there is a larger spread, doesn't that always mean that for the market makers, there is more opportunity for them to make money? Therefore, more market makers and possibly more liquidity? Is there something to be said about that, that there is a correlation between the spread and liquidity?

Mr. JOYCE. Yes. If you don't mind, Congressman, I would like to jump in on that one.

At Knight Capital Group, we make markets in 19,000 companies. We make markets in every single publicly traded company in the United States. Of course, about 6,000 or 7,000 are listed on exchanges, and the rest of them are actually too small to actually warrant a listing on an exchange. And that is where we have ended up with outsized market share, because that business of making markets for small companies has become very tough and a lot of market participants walked away from the opportunity that we stayed with.

So I agree with you completely that if spreads widened, market makers might have an opportunity to have more of a profitable business, that it might attract more sponsorship for more companies. I think that is something that is a likely outcome if spreads widened in an appropriate fashion.

Mr. GRIMM. Is it true to assume that if that is the case, more market makers making markets, they are more likely to do at least some research? And then these companies, it is hard for them to get their research coverage, it is hard for investors to find anything on these companies, that would help the process along as well?

Mr. JOYCE. Yes, sir. Back when I worked at Merrill Lynch, back in the old days when my hair was a whole lot darker, we only made markets in names that we had research coverage. So there are a lot of firms out there that will tie research coverage to market making.

Mr. GRIMM. If I could go back to Mr. Niederauer, exchanges are very heavily regulated under the 1934 Act, but ATSs, including dark pools, are regulated as DDs under Reg ATS. So I would concede, I guess, that ATSs are not as heavily regulated as exchanges. So if I am understanding—I read your testimony, your suggestions correctly, and I just want to make sure I have it correct—it seems to me that NYSE is advocating for its competitors really to be saddled with the same regulatory burdens as exchanges that they are subject to. Is that correct?

Mr. NIEDERAUER. I think it is a tale of two cities. I think what we are saying is if the playing field is uneven and the ATSs are looking more like exchanges than broker-dealers, then there are two ways to level the playing field. You can make it easier for us to compete, or you can burden some of the ATSs that collectively are an important part of the market now with some exchange-like regulation. So I think what we are trying to say is we could go in either direction, but what is clear to us is that the competitive landscape has changed.

As I said in one of my earlier remarks, the bright line between where a broker-dealer's business begins and ends, and where an exchange's business begins and ends, is a lot blurrier than it used to be, but it seems to be only blurry in one direction. We are certainly in no position, because of the 1934 Act and other things, to be in the broker-dealer business. Yet, many of the broker-dealers are able to be owners of venues that look an awful lot like an exchange, but are not subjected to nearly the regulatory burdens that we are subjected to.

It also comes down to the cost of regulation, if I can just add that. So if we thought about consolidating the ability for FINRA or the SEC to regulate the market, and then we thought about what that should cost to regulate the market, an important part of investor confidence, I think we would be delighted to pay a share of the regulatory cost of regulating the markets that was consistent with our market share. Right now, the cost that we bear is exponentially greater compared to our market share.

Mr. GRIMM. What are you doing now to try to compete in the meantime?

Mr. NIEDERAUER. I think we do some of the things that we have talked about on the panel today. We have tried to keep up with the pace of innovation by innovating ourselves.

I think the challenge we have there, to go back to the core of your question, is that we are subjected to an elongated rule-filing process where all of our competitors can comment against us, yet we are never given the opportunity to comment on any innovation they might like to install in their less-regulated pool because they don't have a rule-filing process.

Mr. GRIMM. My time has expired. Thank you very much. I yield back.

Chairman GARRETT. The gentleman yields back.

Mr. McHenry is recognized.

Mr. MCHENRY. Thank you, Mr. Chairman; and I thank you for allowing me to sit in on this hearing and ask a question.

As the panel knows, I have a bill. The committee staff has presented you with a draft. Many of you have made comments on it.

The point is, we have small companies that maybe at the time—whether it is Whole Foods or Apple, Microsoft or Dell—started life as small companies that eventually moved to prominence. My thought process here is to incentivize small companies to seek our exchanges, to seek the public markets. It is good not only for the institution but great for small investors and those that are concerned about retirement savings and the like.

But, with the advent of high frequency trading and markets being what they are, liquidity begets liquidity. So how do you help those that are on the edges?

The comment made just a few minutes ago is we are not talking about a large percentage of the market, whether in cap or the amount of trading, but an important segment so that we can have folks get onto the public markets, so the idea being that you have some liquidity support. So with market fragmentation, high frequency trading, those top names get enormous focus. They get lots of liquidity as well.

So, Mr. Niederauer and Mr. Joyce, you have mentioned this, but could you describe what you would expect to be included in a liquidity support agreement if my legislation were to pass.

Mr. JOYCE. Your point is well made. I think the data has proven that most jobs are created post-IPO, so we certainly want to encourage as much of this as possible, getting companies into the public markets.

I would say that we have talked about three main things, tick sizes being one. And under the heading of tick sizes, if they are wider, they may encourage more market makers to participate, more market makers to sponsor the stocks, the companies in question, more market makers to perhaps pick up research of these stocks and companies in question.

I also think you need to make sure that you are comfortable with the relationship between the investment banking entity that is arguably bringing the company public and their own in-house research department. It is not always nefarious. It is not always what it has been portrayed as in the press. Usually, they work well, hand-in-glove, and it is a very beneficial relationship to have research support a new company.

So, again, I would allow issuers to pay for market-making support, if that is the way they want to proceed. It doesn't have to be a whole lot of money, but it would be something that would be an incentive. Make sure you allow research to articulate the story so that the general public will be interested in it, and think about why you need tick size to encourage market makers to participate more frequently than they currently do.

Mr. NIEDERAUER. We have done things like this in other product areas already, so we think it is very applicable. In the markets we operate in Europe, this is already much more the rule than the exception. So we know there are some long-standing rules here that we hope your legislation will give us an opportunity to revisit,

right? We know that it has historically has been thought of as, well, we are not going to allow such a thing as a company incenting someone to provide liquidity in their security. We think your legislation opens the door, and we would be happy to work with you to do that.

We also hope that the profit opportunity by widening out the spread for the dealers will make it easy for those markets to stay transparent.

Ideally, from our point of view—I realize it is talking our own book—stay on exchange, which we think would be healthier. And we hope that one of the outcomes of this would not be that it gives a perverse incentive for people to make the markets more opaque, but I think we would be willing to take that chance.

Because I think your first point is the right one. This is not only good for these small companies, investors; it is good for the country, right? Because this is where job creation comes from. This is the backbone of America. We need to get back to where we are facilitating their entry to the capital markets, which is the only growth capital they can get their hands on, to help them be great companies some day, and we have to give them their start.

Mr. MCHENRY. So what protections are required in Europe to allow this basic liquidity support to be provided by broker-dealers? What does that look like?

Mr. NIEDERAUER. Yes, I think the good news is there are not many protections required. Because it is just simply a pragmatic approach to saying that a lot of the benefits of market innovation, as you pointed out, Congressman, have helped the big companies. They really haven't helped the SMEs. And that is not just in the United States. That is all around the world.

So there is not a huge set of rules around this. It is just simply a pragmatic approach, kind of like the JOBS Act and the approach we took on Reg A was, where it didn't require a huge amount of infrastructure around it. It is just common sense that says we need to create incentives for people to support these companies when they are in the public market. So we can share that with your staff, but it is not complicated in the slightest.

Mr. MCHENRY. Thank you.

Thank you, Mr. Chairman.

Chairman GARRETT. I thank you, Mr. McHenry, and I thank the panel as well. I believe that concludes all the Members who are here for the first panel, so I thank the witnesses very much for your time. Your testimony was fascinating.

The Chair notes that some Members may have additional questions for this panel, which they may wish to submit in writing. Without objection, the hearing record will remain open for 30 days for Members to submit written questions to these witnesses and to place their responses in the record.

With that, you are excused, and thanked as well.

As you make your way out, we then look forward to our second panel. We just note that sometime today we will have votes, and I know there is another committee coming in after votes, so that is why we are moving on expeditiously to the second panel.

Greetings to the second panel, and welcome as well. We welcome you here, and we look forward to your testimony, and the admoni-

tion I will give to this panel as I always do, for those who have not been here before, is to make sure you bring your microphone close and try to abide by the little red, yellow, and green lights in front of you as far as your 5-minute timeframe.

We will begin with Mr. Mathisson. Thank you for being with us, and you are recognized for 5 minutes.

STATEMENT OF DANIEL MATHISSON, HEAD OF U.S. EQUITY TRADING, CREDIT SUISSE

Mr. MATHISSON. Thank you.

Good morning, my name is Dan Mathisson, and I am the head of U.S. equity trading for Credit Suisse. Credit Suisse is a U.S. broker-dealer unit formerly called First Boston, which has been in operation in the United States since 1932, and today Credit Suisse employs 9,400 people in the United States. I have been working in the equity markets for the past 20 years, and I appreciate the chance to appear here today and give my opinions on the markets.

Credit Suisse believes that overall, the U.S. markets are very good and remain the envy of the world. We recently published a broad survey of market quality where we found that bid-ask spreads in the United States are the tightest in the world, intraday market volatility has been decreasing since 2005, and the total number of market disruptions has been decreasing over the past decade. After looking at these, plus a broad number of other indicators, we believe that Reg ATS, decimalization, and Reg NMS were all successful at making the U.S. markets more efficient, fair, and equitable.

However, markets can always be made better, and so today we suggest three improvements. First, the trading errors that occurred on the day of the recent Facebook IPO served to highlight a peculiar quirk of the U.S. market structure that needs to be addressed, namely, that exchanges do not have material liability for their technology failures. Dating back to the days when exchanges were not-for-profit, member-owned organizations, exchanges have SRO status, and therefore, they have been considered by courts to be quasi-governmental entities. This quasi-governmental status means that they have historically fallen under the absolute immunity doctrine, which protects them from liability judgments even in cases of gross negligence or willful misconduct.

Yet, exchanges today are not particularly different from broker-dealers. While they still have a few vestigial regulatory functions, the vast majority of their broker-dealer regulatory responsibilities are now outsourced to FINRA. Both exchanges and ATSs accept buy and sell orders and match them electronically; both exchanges and ATSs offer undisplayed orders, typically called dark orders; both exchanges and ATSs offer displayed orders; and both are for-profit enterprises.

Although, practically speaking, they are very similar, they have very different legal status. ATSs may be held liable for their actions like almost all U.S. businesses, while exchanges may not. We believe that considering exchanges to be quasi-governmental entities no longer makes sense and that restoring exchanges' moral hazard would be an important step towards creating a more reliable marketplace.

Exchanges should not have been allowed to convert to for-profit entities 6 years ago while still retaining their SRO status. You should not be able to be a for-profit and a not-for-profit at the same time. It is time for policymakers to correct this mistake by removing exchanges' SRO status.

Our second policy suggestion is that it is time to eliminate the restriction on broker-dealers owning more than 20 percent of an exchange. This would allow broker-owned ATSs to become exchanges. Historically, the 20 percent restriction was put in place to ensure that broker-dealers could not control a regulator and regulate themselves. Yet now that exchanges are also for-profit enterprises just like broker-dealers, and now that they outsource most of their regulatory function to FINRA, we believe this ownership cap is obsolete.

Exchanges have four very significant economic advantages over ATSs, which is why two ATSs, BATS and Direct Edge, worked very hard over the last few years to successfully convert from being ATSs to being exchanges. Allowing ATSs to convert to exchanges would effectively level the playing field, allowing regulators to have one set of rules for everyone.

Lastly, we suggest it is time for the regulators to do a comprehensive review of the consolidated tape plans. The Consolidated Tape Association has a legal monopoly on providing a consolidated stream of real-time data from our Nation's stock markets. The CTA sells this data and makes a profit of approximately \$400 million per year, which is then rebated to the exchanges based on a complex formula. The revenue that exchanges receive from these rebates is significant. For example, in their annual report, NASDAQ reported receiving \$116 million in tape rebates in 2011. These plans were set up in November of 1972. After 40 years, we believe the current tape revenue model is obsolete and rife with problems, and we recommend a full review of the tape revenue system.

Thank you for the opportunity to appear today, and I will be happy to answer any questions that you may have.

[The prepared statement of Mr. Mathisson can be found on page 112 of the appendix.]

Chairman GARRETT. Thank you.

Mr. O'Brien, welcome, and you are recognized for 5 minutes.

STATEMENT OF WILLIAM O'BRIEN, CHIEF EXECUTIVE OFFICER, DIRECT EDGE

Mr. O'BRIEN. Thank you.

Chairman Garrett, members of the subcommittee, I would like to thank you for opportunity to testify today on behalf of Direct Edge. With over 10 percent of all U.S. equity volume trading on our exchanges every day, we are one of the largest stock market operators, stock exchange operators not only in the United States but in the world.

We have talked about the theme of confidence, and I think it is the right one. Investor and issuer confidence is perhaps at a low point. You can question the merits of those concerns, but those concerns exist, and I think you have to acknowledge them. I think there are some simple steps that we can take that are intellectually

consistent and operationally feasible to start the process of helping to restore that confidence.

I don't think monopolies are the answer; more efficient competition is. I think some people will argue that confidence is undermined by the number of choices that investors have and the complexity of navigating it. I just don't believe that. I don't think investors think the soap market is unfair because there are 500 different kinds of soap, and I don't think they think the stock market is unfair because there are 50 places to execute your trade.

I think, at the same time, we have to create more efficient mechanisms for those markets to communicate with one another in times of market stress. The flash crash, the recent IPO troubles were not caused or even made worse by fragmentation. They were made worse by the lack of efficient and effective communication among market participants in those situations. In the IPO situation, there were absolute monopolies, and there was very little visibility into what was happening there, and I think that was the biggest problem.

Thankfully, I think we can easily improve this, and we have already started to do that. The limit up/limit down mechanism the SEC just approved can help all market participants deal with sudden and sharp changes in stock prices in a cohesive manner. I think more work can be done so that in crisis situations, all market participants can quickly come together to make sure these problems don't cascade and investors are protected.

I think rather than restricting off-exchange trading, exchanges should have greater flexibility to make their markets a better place for institutional and for retail order flow. I kind of reject the notion of an unlevel playing field. I don't like that term. Somebody has it better, we have it worse, we need to fix it. I just want to make my exchange a better place for retail and institutional orders and for all our customers, quite frankly.

I think sometimes we are hamstrung by the current application of the principle of fair access under Federal securities regulation, the notion that if you can't make it available to everyone, you can't make it available to anyone. I think we need to lay down a clear mandate, whether it is through provision of the Federal securities laws or other means, to make it clear that exchanges can roll out programs that are targeted toward long-term investors.

I think we also need to highlight SEC oversight of market participant technology. The SEC is already doing this very rigorously. I don't think a lot of people know it. There is the automation review policy and the related inspection programs the SEC undertakes which are very vigorous. That program, however, is still technically voluntary. I think it should be formally made a Commission rule, and I think that would send a powerful message to investors that the glitches that investors perceive to have occurred are being overseen from a regulatory perspective, and we are working to further mitigate these issues from a risk management perspective.

I think with respect to technology, we have to incentivize the proper use of technology rather than trying to turn back the clock. It is going to be unique to the stock market that people view technology as the problem rather than the solution, but you can't deny that it is a source of angst how automated our markets have be-

come. At the same time, I think taking steps to making trading slower not only wouldn't work; they wouldn't improve investor confidence in the short term or the long term. I think it is about providing the right incentives in a framework of shared responsibility. Direct Edge was the first stock exchange to roll out a program that requires members to examine the amount of orders they send to our system relative to trades and imposed economic consequences if that ratio was too high. I think that is the type of framework that we should be pursuing rather than artificially impeding the evolution of technology in our markets.

I think, in addition, investors need some more transparency regarding where their orders are routed in addition to where they are executed. A basic question that investors need to answer to feel confident, to trust but verify, is what happened to my order? There is a lot of information out there right now about where your order is executed, but I think investors want to know where it was routed in the course of trying to be executed as well. We could expand SEC Rule 606 for individual investors. We can actually implement this on an order-by-order basis technically quite easily for institutional investors, and we need to explore that.

I do agree with the theme in the earlier panel that regulation should be made more flexible to enhance the trading of smaller cap companies. The one-size-fits-all model doesn't work. The stock that trades 10,000 shares a day effectively trades under the same market structure as Bank of America that trades over 2,000 or 3,000 times that amount. I think the legislative proposal put forth by Congressman McHenry and Vice Chairman Schweikert would be good first steps there.

I think from an informational perspective, there is a concern that there is not adequate information for all investors. We need to create a national depth of book feed, not only to give investors easy access to the best price in the market at any one point in time, but all those prices, we can leverage the existing infrastructure and I think do that quite easily.

Finally, I think the consolidated audit trail needs to be approved, implemented, and funded. Investors want to know that cops on the beat have the information and the tools available to do their jobs. Again, I think this will send a powerful message that we are making sure that happens. I thank you for the opportunity to testify, and I look forward to answering your questions.

[The prepared statement of Mr. O'Brien can be found on page 136 of the appendix.]

Chairman GARRETT. Thank you, Mr. O'Brien.

Mr. Solomon, welcome, and you are now recognized.

STATEMENT OF JEFFREY M. SOLOMON, CHIEF EXECUTIVE OFFICER, COWEN AND COMPANY

Mr. SOLOMON. Thank you, Chairman Garrett, and members of the subcommittee for inviting me to speak today. My name is Jeff Solomon, and I am the chief executive officer of Cowen and Company, an emerging growth investment bank that is focused on servicing growth-oriented companies in sectors such as health care, technology, telecommunications, media, aerospace and defense, and retail. Our clients are some of the best and most motivated entre-

preneurs in the country. They seek to develop products and services that create positive change for whole sections of our economy and generate substantial long-term private sector jobs. These entrepreneurs need access to capital to fund their growth, but their choices to raise capital in the public markets are impacted by a lack of trading liquidity in small cap stocks.

So when we talk about market structure, my perspective is guided by the belief that fostering trade liquidity in small cap stocks will increase access to capital for emerging companies and help generate job growth in the private sector. For the record, I just want to tell you a little about me. I was born and raised in Pittsburgh; I do not come from a long line of Wall Street executives. My father owns a small manufacturing business, and his father actually worked as a machine operator for Westinghouse Electric for 35 years. Most of my 24-year career on Wall Street was on the buy side, where I was buying and selling public securities and private securities with a lot of Wall Street firms.

So now, as the CEO of Cowen, I am advising companies on how to access the capital markets, and we also produce high-quality research on these companies. My comments focus specifically around small cap companies because I really think that is the area we should focus on as we talk about market structure.

I would like to commend Congress on the recent passage of the JOBS Act, which will help, certainly help new issuers, but there is still a lot of work to be done around market structure to facilitate capital formation. The last decade has shown a significant decrease in trading liquidity for most small cap issuers. Mutual funds and exchange traded funds are now the dominant market participants, and a lack of trading liquidity in any small cap stock makes it difficult for these institutional investors to accumulate positions.

Moreover, portfolio managers carefully assess liquidity when determining position size and price as they know it will be hard to exit an investment when their price targets are reached or should they need to sell to generate liquidity to meet investor redemptions. This dynamic has severely narrowed the investment universe for small cap companies that might be looking to do an IPO, and therefore makes it difficult for them to raise capital to expand. Indeed, the number of IPOs raising less than \$60 million has fallen precipitously over the past decade. One of the reasons for the lack of trading in small cap stocks can directly be attributed to the advent of decimalization or penny increments. As a direct result of reduced trading spreads, professional market makers and specialists whose job it was to provide liquidity for their clientele were forced to overhaul, sell or dissolve their businesses in order to contend with much lower revenues.

This, in turn, gave rise to two forces affecting market structure, which would be electronic trading and reduced research coverage for small cap stocks. In order to reduce costs, many firms developed electronic market makers to replace human market makers and specialists, which caused a severe reduction in price discovery between buyers and sellers of small cap stocks.

While some of the effects of electronic trading are hidden in the larger names, it has become uneconomic for many sell-side firms to make markets in small cap stocks. In my opinion, we need to find

a way to bring back the human element that is so critical to fostering orderly liquid markets in small cap stocks. Wider spreads would certainly help to pay for that. To be clear, I am not calling for the wholesale repeal of decimalization, but like many people here, as we have heard on the panels today, decimalization is not a one-size-fits-all proposition. From what I see, decimalization has principally benefited institutional investors who trade stocks with market caps of \$2 billion or greater, where the markets always exist to trade these stocks, but the benefits of trading small cap stocks in penny increments are far less clear to me when weighed against the effects of the obvious decline in trading liquidity that has occurred. As such, I am suggesting that Congress and the regulators consider increasing the tick increment from emerging growth companies or allow a company to determine their own increment size. Indeed, I recognize the SEC has undertaken a report on the impact of the decimalization on small companies as required by the JOBS Act, and I look forward to reading their findings. Some of the pilot programs proposed here today are also wonderful ideas as well.

What I hear from private companies and small cap issuers is that it is essential to have published research from Wall Street firms following an offering. They understand that secondary market liquidity is critical to further capital formation needed to fund their growth, and with the support of revenue for market-making activities, Cowen would absolutely dedicate more resources to research and trading and support for these companies in the markets.

To be fair, over the past decade a number of Wall Street firms have done things to damage their relationship with the American people and the investing public, but the vast majority of people on Wall Street, especially those at growth banks like my firm, had nothing to do with the mortgage mess or the financial crisis.

By pursuing modifications to existing legislation and regulations around decimalization that bring back market makers for small cap stocks, Congress and the regulators will be telling Wall Street executives how they can allocate their resources to profitably meet the needs of their clients while fostering job growth in America. We can still be the leader in funding successful innovation in the United States, but in order to thrive, once again, we must make it more economically viable for small companies to access capital markets to fund their growth, create new industries, and provide Americans with the job growth from the private sector we so dearly want and need. Thank you.

[The prepared statement of Mr. Solomon can be found on page 163 of the appendix.]

Chairman GARRETT. Thank you, Mr. Solomon, I appreciate that.

Mr. Toes, you are recognized now for 5 minutes. Welcome to the panel.

STATEMENT OF JIM TOES, PRESIDENT AND CHIEF EXECUTIVE OFFICER, SECURITY TRADERS ASSOCIATION (STA)

Mr. TOES. Thank you, Chairman Garrett, Ranking Member Waters, and members of the subcommittee. The STA welcomes the opportunity to present comments before the Subcommittee on Capital

Markets and Government Sponsored Enterprises on market structure. The STA was formed in 1934. We are an organization of individuals who are involved in the trading of financial securities. Our membership is diverse, both geographically and in the roles we fulfill in the marketplace. Much of our testimony today will reference years of comment letters STA has written on market structure, letters which were the culmination of input received from a wide range of market participants. The testimony of STA over the years has accurately informed and alerted Congress and the SEC to the possible consequences, both intended and unintended, of proposed changes to market structure. We are pleased to have the opportunity to do so today.

Our testimony will focus on three areas of concern STA has with today's market structure: investor confidence; capital formation; and the quality of regulation. We will also identify specific areas which we, as practitioners, believe are the primary forces causing our concerns: operational capability; decimalization; and the rule-making process for both SROs and the SEC.

Investor confidence is influenced by several factors, none more than the operational capability of the markets. Failures of that capability, even as a rare or limited occurrence, destroy investor confidence much more so than any regulatory or market structure minutia. Fostering greater operational capabilities should be the foremost consideration of any regulatory or legislative entity that has oversight or influence on our financial markets. It is imperative that such entities ensure no demands are made on the operational capacity of the industry that results in its being unable to deliver the services it purports to offer. Furthermore, behavior which stresses the operational capability of our markets should be identified and reviewed by the proper regulatory agency. Our markets need to be open to serve a wide range of market participants with varying business models. Therefore, it is critical that behavior which is deemed harmfully, potentially harmful to the overall operational capability of our markets not be allowed to exist unimpeded.

Today, rules governing the securities markets are introduced to the marketplace by SEC initiatives in the form of rule proposals or the rule filings of SROs submitted to the SEC for approval. SEC approval of SRO rules and SRO rules in certain cases that are effective upon filing present unique problems. While there are similarities in these processes, they are distinct and vary primarily in the level of due diligence required of the Commission. There are efficiencies within both processes that when applied properly, serve the competitive nature of our markets and investor confidence. Our concerns at the STA reside in the lack of criteria that are used in deciding which process better serves investor confidence when rules are proposed.

The Commission should consider alternative approaches to the approval of important SRO rules that have material market-wide implications on the structure of our marketplace. Rather than picking and choosing between the proposals or, in the alternative, approving all of them in cases where multiple rule filings are made that are identical or very closely related or where the SRO rule filings have material market-wide implications, the Commission

should consider substituting a proposal for a uniform market-wide SEC rule in lieu of those of the SROs. STA does not suggest that changes to fee structures or other SRO proposals that attempt to differentiate themselves would merit a uniform SEC approach. Instead, the Commissioners should propose uniform, market-wide rules when there are significant market-wide implications.

STA believes that in addition to the review of specifics of SEC and SRO rule proposals, the quality of regulation would be improved and investor protection better served if the SEC addressed the increased need for industry input on technology and back office operations in the rulemaking process. The existing rule review and approval process is increasingly ill-suited to obtaining this information. We submit that the SEC needs to take formal action on regulations and particularly before adopting those imposing significant technological or operational burdens on the markets, to create advisory or implementation committees as permitted by law to ensure it receives input from the trading community including experts in trading systems and products and develops an understanding of the operational demands of the proposed rules. We are encouraged that in the adoption of the limit up/limit down pilot program, the SROs responded to the STA's recommendation to establish an advisory committee which is to be composed of a broad cross-section of market participants who may submit views on the matters relating to the limit up/ limit down plan.

Decimalization: There is perhaps no single market structure or event that has yielded more benefit to retail investors who transact directly with the marketplace to buy or sell securities than the introduction of decimal prices. The benefits for this class of investor are witnessed every day in the narrow bid-ask spreads in securities in which they trade. The data which shows implicit savings to these investors brought on by narrow spreads becomes even more impressive when it shows that even during moments of volatility, spreads remain tight.

This benefit, which was immediate and long-lasting, however, has come with the cost of the secondary market's ability to perform their capital formation function. In its letter to the Commission dated May 14, 2003, the STA wrote, "The raising of equity capital by corporations is the cornerstone of our economy. However, given the recent regulatory events surrounding research and investment banking and market structure changes affecting trading, the raising of capital has become exceedingly more difficult. That, in turn, is impacting the U.S. economy and its ability to create jobs. Action must be taken soon to remedy what could be soon a capital formation crisis. A reexamination of decimalization is a good place to start." Members of the panel, we reiterate that this letter was written in May of 2003.

The unintended consequences of decimalization have been dramatic, most notably in a decline in the quantity of liquidity provided in some stocks in the small- and medium-sized companies. Shareholders benefit from the presence of liquidity providers. They dampen market volatility. STA recommends an examination of the impact of decimalization on electronic and traditional market making as well as other liquidity providers, considering the costs of

maintaining trading operation in a decimalization regime and the balance of market maker obligations with the benefits.

One way to conduct an examination is through a Commission-initiated pilot program utilizing a statistically significant number of small and mid-sized companies to study the impact of the secondary markets on quoting and trading securities in pricing increments greater than a penny. Thank you, and I look forward to answering your questions.

[The prepared statement of Mr. Toes can be found on page 174 of the appendix.]

Chairman GARRETT. And I thank you very much.

Mr. Weild, welcome to the committee. You are recognized for 5 minutes.

**STATEMENT OF DAVID WEILD, SENIOR ADVISOR, CAPITAL
MARKETS GROUP, GRANT THORNTON**

Mr. WEILD. Thank you. Chairman Garrett and members of the subcommittee, thank you for inviting me today to speak about an issue of great importance to many Americans: how to structure stock markets to better support the U.S. economy, job growth, and investors.

My name is David Weild. I oversee the Capital Markets Group of Grant Thornton, one of the six global audit, tax, and advisory organizations, and I was formerly vice chairman of the NASDAQ stock market with responsibility for all of its listed companies. I also ran the equity new issues business of a major investment bank for many years.

The IPO problem is, in reality, an after-market support problem. The current U.S. market structure failed to support the needs of small and mid-sized companies that were absolutely essential to U.S. economic success. My written testimony demonstrates four key structural challenges that the U.S. public stock markets must confront in order to foster the growth of small companies and in turn the economy.

First, inadequate tick sizes, the smallest increment by which a stock can be bought or sold, have eroded the economic infrastructure required to support small cap stocks. This is to the fore issue that Mr. Campbell raised. This infrastructure includes equity research, sales, and capital essential to the visibility and liquidity that small public companies need. Think of tick sizes as the tolls required to maintain the bridges, roads, and tunnels of the stock market. In fact, our stock market today only covers the cost of trade execution services. Lack of after-market support for small cap companies means that fewer and fewer companies are doing IPOs, and fewer IPOs means fewer U.S. jobs.

Second, inadequate tick sizes have undermined Wall Street's fundamental ability to properly execute IPOs, and the evidence is clear. Companies going public today are more mature than they were in the 1990s, and yet their IPOs are failing at increasingly higher rates. More deals are being withdrawn, more are being priced below their initial filing range, and more are trading below their initial IPO price, including Facebook.

Third, U.S. stock market structure is optimized, clearly optimized for trading big brand and large cap stocks. The structure en-

courages computerized trading and speculation at the expense of fundamental investment, yet small cap companies under \$2 billion in market value represent 81 percent of all listed companies but only 6.6 percent of market value.

And finally, today's one-size-fits-all stock market, which we believe is attributable to the order handling rules, regulation ATS, decimalization and regulation NMS, has the United States averaging only 128 IPOs per year instead of the 500 to 1,000 that we project in our written testimony. This has drastically reduced the number of U.S.-listed companies and has cost America, in our view, as many as 10 million jobs.

There is ample rationale for treating small company stocks differently. You have heard much of it on this panel. We specifically recommend that small company issuers be allowed to choose their own tick size within a certain range, preferably 1 to 25 cents per share, to encourage research sales and trading support for their stock. Providing better economic incentives to support small cap stocks will lead to increased IPOs and in turn higher rates of capital formation and job growth by both public and private companies.

We commend Congress for passing the JOBS Act. It is a good first step, but even while passing the Act, Congress recognized the need to review U.S. market structure by requiring the United States to study the impact of decimalization on the number of IPOs and small cap securities. Following the study, the SEC is allowed to set a minimum trading increment of 1 to 10 cents for emerging growth companies. We recommend that Congress encourage the SEC to go a step further and initiate a pilot program that allows all small cap companies to choose their own tick sizes ranging from 1 to 25 cents within some tolerances.

Back in 1971, there was a technology company that was unprofitable on an operating basis. It was only 3 years old when it went public and raised only \$8 million. It created a revolutionary product, the first commercially available microprocessor chip. After it went public, it actually missed its product delivery date, and investors cut its stock price in half. Talk about risk. That kind of company would never make it to the IPO stage in today's unforgiving market. The name of that company? Intel Corporation.

How many Intels have been needlessly lost to the U.S. economy by today's market structure? Congress has the power to help reverse our current situation and bring back the stock market that once was the envy of economies throughout the world. We recommend that Congress support an SEC pilot program that allows all small cap companies to choose their own tick sizes. Thank you for the opportunity to speak today.

[The prepared statement of Mr. Weild can be found on page 178 of the appendix.]

Chairman GARRETT. I thank you, and I thank the entire panel.

I will yield myself the first 5 minutes. Going in reverse order, Mr. Weild, on that point, so I think along the lines of some things that Mr. Campbell was raising, which were good points, the forest through the trees analysis, so we have heard, in the second panel, the second panel is a little bit different from the first panel, we have gotten into some more detailed recommendations on it. Mr.

Weild, you are saying, a couple of points you are making; one is that the one-size-fits-all is not appropriate, right? Let me just drill down on that on a couple points, and I will open this up to the whole panel. One-size-fits-all with regard to the regulatory nature of it? At the other end of the panel, Mr. Mathisson was talking about that aspect of it. Would you like to chime in on that, maybe either refute or support what Mr. Mathisson was talking about as far as the advantages and disadvantages that you have now where you don't have a one-size-fits-all, where you have an exchange-regulated SRO situation out there and the cumbersome process that we have, they have with regard to changing of the processes on the platform as opposed to the ATS?

Mr. WEILD. Chairman Garrett, I think it is a question of perspective. From the perspective of issuers, markets have been totally homogenized with decimalization and Reg NMS and Reg ATS, and as a consequence, markets trade identically, it really doesn't matter any longer if you list on the New York Stock Exchange or the NASDAQ stock market for that matter.

I think there is a separate issue, which is the regulation of those environments, and there is some diversity there, if you will, and I would take issue with Mr. Mathisson in the sense that I think it would be very unwise to create open-ended liability. We have two listed stock exchanges left in the United States, and if one of them had a catastrophic failure and were liable and were put out of business, that would just irrevocably harm investor confidence in the United States. These are two different issues.

But for us to give issuers a seat back at the table, what happened with Reg ATS is that we opened up markets to lots of trading centric enterprises that don't list companies, so the representation of issuers has been undermined. So if you give them choice over tick size, it puts them into a discussion with their institutional investors and with their value providers, the investment banks, about what are the optimum number, and it actually gives them a seat back at the table, which I think is one of the things that has been lost.

Chairman GARRETT. Mr. Mathisson, do you want to chime in?

Mr. MATHISSON. To respond to that, we don't have 2 exchanges in this country, we have 13 exchanges in this country, and all of them do have the right to list stocks, and some of those inevitably will become successful at listing stocks. And if the regulators eliminated the 20 percent restriction on broker-dealer ownership of exchanges, we would likely have another 6 or 7 more, so we could have an environment where we would have 20 exchanges. If we had 20 exchanges, and one of them went down due to their own errors and had such a big trading incident that it brought their entire system down and they went bankrupt, you would have at least—in today's world, we would have 12 others; you could have 19 or 20 others if the restrictions on exchange ownership were removed.

As for tick sizes, we would have no problem with an experiment to allow corporates to choose their own tick size. I think that it would not make a significant difference in the IPO markets or in the ability to raise capital. However, I do think it meets the chairman's criteria that you mentioned in the first panel of, first do no

harm. I do not think it would do any harm to the markets, although I don't expect it would significantly help, either.

Chairman GARRETT. Moving down, Mr. O'Brien, you heard some of my questioning on the first panel, and I just wonder if you could chime in here, and also with regard to how the exchanges are treated under Dodd-Frank Section 915 and the like, in your opinion?

Mr. O'BRIEN. Sure, and let me also add a couple of remarks on your other questions. I think we are somewhere in the middle. You remember Direct Edge's history; we started as a broker-dealer-run ATS, and we volunteered for exchange regulation and classifications. It is not an accident of history or anything. We wanted to become an exchange. We took on that mantle willingly. I think, with some limited exceptions, the process works but could be improved, and I think thematically, just the approach of how exchanges are viewed as having to make everything available to everybody; we can't create more targeted opportunities within the framework of a common network.

Dodd-Frank was supposed to make the process better. It really hasn't. I am not going to say it has made it worse. It has made it different in the sense that now these deadlines are hit, and the opportunities to extend review periods are taken, many more exchange rule filings are disapproved now or at least the proceeding to start disapproval begins. The SEC used to pocket veto effectively exchange rule filings they didn't like. They can't do that anymore. So rather than do that, they will just start the disapproval process, and that starts another clock. So the intent of what Dodd-Frank was meant to do is not being implemented in reality.

Chairman GARRETT. In 3 seconds, any buyer's remorse as far as going into the exchange format with all the restrictions you have now because of that?

Mr. O'BRIEN. No, not at all, because it has been better for our customers.

Chairman GARRETT. Thank you. The gentleman from Arizona.

Mr. SCHWEIKERT. Thank you, Mr. Chairman. I always hate buyer's remorse, don't you? Okay, so much for some humor.

Chairman GARRETT. That is right, so much for—

Mr. SCHWEIKERT. Yes, I know. One of the things, and forgive me for being somewhat fixated on this, but the discussion of tick size, particularly someone who truly wants to see that next generation of small companies come to market. Does it really make a difference? Because we heard in the previous panel of technology, that is simple, they can deal with it. So now the question is, the SEC does its study. Should we go—should it be 1 to 25 cents, should it be 1 to 10 cents? First, does it make a difference? What should it be? Should the company be able to choose it itself or should there be some metric from the exchange choosing it? Mr. Weild?

Mr. WEILD. I think that there is such an incredible difference in terms of the market values and the float values, micro nano cap stocks are under \$100 million, stocks that trade 10,000 shares a day, and then the behemoths that trade in the millions of shares a day, that the one-size-fits-all tick size doesn't allow people to actually create liquidity. Academic literature clearly shows that pro-

liferating ticks, small tick sizes actually increase liquidity in large cap stocks, but they are harmful to liquidity in micro cap stocks.

So to answer your question, absolutely undoubtedly if you want to commit capital, buy a block of stock and get, as we used to say on the trading desk, long and loud to go find a buyer, you need a way to get compensated for that risk. So for a tiny little nano cap stock, under a \$100 million, the right answer might be something close to a quarter point.

Mr. SCHWEIKERT. Is that going to be necessary to get that stock covered by research?

Mr. SOLOMON. Yes. Sorry, David, can I just—

Mr. WEILD. Go ahead.

Mr. SOLOMON. Maybe I am—I think I am probably one of the only people on the panel who actually has a company that writes research on this, and what I would say to you is unequivocally—

Mr. SCHWEIKERT. It is your fault then, right?

Mr. SOLOMON. We do it. I think what is incredibly important is exactly what David said here, the after-market support is really critical to funding companies going forward. I will give you an example with our own company. We are a small cap publicly traded company, we trade about 300,000 shares a day. If you take a penny increment, that is \$3,000 a day if you own 100 percent of the market share in trading our stock on a daily basis. If I want to get more research coverage as an issuer today, I don't—who is going to do that? Where is the value in somebody writing research on me to generate interest when they really don't have a lot of economic incentive to do so? And I think that is a big issue. That is a very big issue.

Mr. SCHWEIKERT. This is a one-off, but it is one we were just actually sitting here talking about a moment ago. For small companies, would you allow a company to provide a blind compensation for research? What would you do there?

Mr. SOLOMON. I am not in favor of paid-for research. I think the research independence rules are good. I actually think the integrity of research should be held sacrosanct and different from anything that has to do with issuers and what they want research people to do for them to be clear. I actually think if you could set your tick increment much wider than the marketplace will react, and if you set it wide enough and there is enough profit incentive for middlemen to come in and start to make markets, then those middlemen will have an economic incentive to write research on your—

Mr. SCHWEIKERT. So your view is the tick size is ultimately the solution to get covered and get someone willing to carry you?

Mr. SOLOMON. Yes, I do believe that is true.

Mr. SCHWEIKERT. Do I have a consensus there? And then what should it be? Should it be the 1 to 25 or should it be the exchange? Who else makes the decision?

Mr. O'BRIEN. I think it is part of the solution. When you think about what a company looking to access the capital markets needs, they are really thinking about two things. One, can I access the capital markets in a way that doesn't overly disrupt my ability to run my business day to day, and there are things that are totally unrelated to equity market structure; the application of Sarbanes-

Oxley, for example, would be an example of that. So there is work to do there.

The second thing is, I don't want to be creating a new problem for myself as a CEO by creating a group of new investors who feel like orphans who can't sell what they bought, who can't understand what is going on in the company. So, in that vein, the potential widening of tick sizes can definitely help. It can increase the liquidity at the bid and ask, so if I am an investor and I want to buy 500 shares, I feel like I am going to be able to sell that, even if the stock only trades 10,000 shares a day because I see 500 shares posted at the best bid or best offer at any one point in time, and I think in terms of how you decide what those tick ranges should be, issuers were ultimately going to look to their advisers. I am not sure how much merit there is in empowering the issuer to pick stock by stock, and I think you also want ease of use for the individual investor, the person looking at the Scottrade or E*TRADE screen, they want to know what the minimum increment is, so they want some standardization.

Mr. SCHWEIKERT. In the 3 seconds I don't have, back to also part of the original question, does changing the tick size bring us new IPOs in the micro categories or the \$100 million and less categories?

Mr. TOES. Yes, and I think one area that hasn't been touched on as far as a benefit of a wider tick increment than the pennies to cost savings. When you think about the cost to maintain the trading center today, a large portion of those costs are really based on transactions. So when you have multiple price points, when you need to clear a trade, when you need to capture a quote, store that quote, those are all transactional type costs that you are incurring. Whether you are clearing a trade of 100 shares or 1 million shares, the cost on that is the same because it is based on a transaction—on a transaction. So when you take the number of price points and you reduce it from a 100 down to 20 on a dollar, you are, in fact, decreasing the amount of transactional costs you have on market data and also clearing fees. So there is a cost savings to be had.

Mr. SCHWEIKERT. Thank you for your tolerance, Mr. Chairman.

Chairman GARRETT. Thank you. The gentleman from California.

Mr. CAMPBELL. Thank you, Mr. Chairman, and so as the clean-up hitter, it would appear, up here, I am pleased to hear, I think, unanimity both up here and down there that we want to reengage small- and medium-sized businesses in public markets again, which they have disengaged, and that we want to reengage the public at large in public markets again, which they have disengaged. I hear pretty much agreement with Mr. Weild's points on the tick sizes, with which I agree as well.

Let me talk again about a couple of other broader things, and then elicit comments from the group. It appears that we have—we, the broad we, Congress, Wall Street—focused on increasing liquidity, increasing speed, and reducing bid-ask spreads at the expense of public confidence, and I say public confidence as opposed to investor confidence because we really need public confidence because everyone in the public is potentially an investor and ought to be, and as opposed to investment over speculation, gambling, and trad-

ing, and transparency, that we have sacrificed those things for the speed, the spreads, and the liquidity, and that is not a good thing, and we need to turn the tables the other way.

And then when we talk about why people don't IPO, I have talked to a number of different owners, CEOs, CFOs, et cetera, of companies who have either gone private, chosen not to take an IPO, or who are now in one of these nonpublic entities that has hundreds or thousands of investors, and why don't they go public? I hear cost; that is a lot of it. We all know that, and we are trying to address that, and we have more to deal with, and that certainly is a lot of it. But I hear a lot of other things, too, that they really don't want the value of their company determined by people whose investment—I will use that term loosely this time—horizon is between milliseconds and months. And particularly if you talk to some of the people who have the large privately traded multiple stockholder companies, they want investors; they don't want traders determining the value of their company, and that that is something that my question would be, how do we get more of that?

And another thing is, and it seems that a lot of what we talk, there are people on Manhattan island talking to other people on Manhattan island about how to keep people on Manhattan island happy with the possible exception of a few people in Boston, who manage some funds, and I have had a couple—and it is amazing, I have heard this from several different people, and they said, I just didn't—I went into, I was in a red—doing close to a red herring on a road show, and I realized that the entire value of my company was being determined by some 25-year-old Harvard MBA, who graduated 3 months ago, who is with a fund that will determine the entire value of this company and will tell me, and I am going to use my industry in order to keep the innocent here, but who is going to tell me, who spent 35 years in the car business, whether I am running my car business well or not, and by the way, that 25-year-old Harvard MBA doesn't own or drive a car. And I am not going to allow my company's value and subject it to that kind of ridiculous oversight.

So I burned up all but a minute. But how are we going to solve those problems? Because I am not making this stuff up, and these are not single individuals who are telling me this. They are multiple individuals, and they are not in the public markets—

Mr. SOLOMON. —road shows in Pittsburgh, I am for that.

Mr. CAMPBELL. Okay, fair enough. I should say Washington to Boston, that little thing right along there. Anyway. Yes?

Mr. TOES. There are a couple of topics that you hit on there that speed for some reason has gotten a nasty connotation next to it. Speed actually helps investor confidence. People who sit at home and they look at the—they are trading from their, they are trading directly with the marketplace, investors, traders, they want to know when they look at the price on the screen from their computer that the price is what the price is at that moment in time, not—

Mr. CAMPBELL. Millisecond speed?

Mr. TOES. Hold on a second, hold on a second. Let me finish. And they want to know that the price they are looking at is where the stock is trading at that time, and when they hit the button to buy

or sell, when they make the decision to buy or sell, that the price they get is the price they are seeing on the screen. You are correct.

Mr. CAMPBELL. If they hit the button fast enough. I would make exactly the opposite argument. You cannot hit the button fast enough today. People don't—that isn't quick enough.

Mr. SOLOMON. I think there are different kinds of investors. So speed is one attribute that is desirable, but you have to ask yourself the question of whether or not there could be balance. I certainly think that for a lot of the issuers we talk to, absolutely what you said resonates. They want long-term investors. If you buy it at a penny lower or a penny higher, it shouldn't matter if you are a long-term investor. There used to be a saying on the Street, "Don't miss the trade for a quarter." I watch people every day miss the trade for a penny or half a penny, and I wonder to myself, if you really have some long-term view on whether you think the stock is going to trade higher or lower, what does it matter to you?

To some people, it does, and I think we need to be able to offer that, so you don't want to take that away, and speed has helped with execution, no question about it, but you have to ask yourself at what expense, and I certainly think that if we can create, again, a fundamental marketplace where there is an opportunity for middlemen to stand and really take risk positions with the advent of creating liquidity, that is really what I think Wall Street is probably supposed to be doing, really taking risk positions and finding buyers and sellers and crossing trades and really moving product as opposed to storing product. That is really what is at the cornerstone of creating that ecosystem that is so vital for new issuance. And speed plays into that, but I don't care if the market is fast or the market is slow as long as there are people congregating at a common point that will allow for there to be more trading liquidity on a daily basis.

Mr. WEILD. Larger tick sizes throughout the market favor investors over traders and computer strategies.

Mr. CAMPBELL. Okay. If there are no other comments from you, then I will yield back, Mr. Chairman.

Chairman GARRETT. The gentleman yields back. The gentlelady from New York, where all these trades are happening, and where 25-year-olds are doing these nefarious things.

Dr. HAYWORTH. I am 52; don't blame me. Thank you, Mr. Chairman.

Mr. Weild, you just referred to tick size, and I did have the opportunity to ask members of the antecedent panel about how we might, how you might provide guidance from your industry perspective toward a pilot project, and I know Mr. Schweikert has been working, I think, with the SEC on studying the implications of tick size for the liquid small cap marketplace, but there certainly has been support for a pilot project. What elements would you like to see in terms of flexibility of setting the tick size? How would you base that? What kind of parameters would you use for that kind of flexibility? Who should be managing or participating in that kind of pilot project? And, I open it to the panel.

Mr. Toes, maybe you would like to start?

Mr. TOES. We do have some suggestions for the Commission on what criteria to use. We realize that it is a core function of the Act

that marketplaces are supposed to allow for customer-to-customer activity and have that activity go on unimpeded by middle people, but the criteria that we would use is that the role of the market maker obviously is to offset imbalances, when there are no customer-to-customer, when there are no buyers and sellers in the marketplace. So we feel the best way to measure that occurrence is to really look at the dollar volume of these particular stocks. So we would probably look for a criteria that is based less on the price of security, less on this actual market cap of the security, but more to do with the dollar volume of what the stock trades because we feel that is probably the best indicator for what, how much customer natural flow resides in the particular stock.

Dr. HAYWORTH. Where the marketplace is of the stock's viability, if you will, how vigorously it is trading.

Yes, sir?

Mr. O'BRIEN. I think that there are two principles we should adhere to when trying to implement any kind of experiment or pilot program with tick sizes. First, it has to be easy to assess the impact of it, right? That is why I am not necessarily in favor of each issuer choosing. The process of them choosing is going to take some time, and it may be isolated.

Dr. HAYWORTH. Too many variables?

Mr. O'BRIEN. Too many variables. You want to address those things out. The second is that you want it to be easy for investors to understand. Again, we may think it is good, but if the average person in your district thinks, here is another aspect of the stock market where the analyst knows what each tick size is and I don't, it could cause some disengagement, and I am not in favor of that.

I would agree with Mr. Toes; the two variables I think are the size of the company in terms of its market capitalization and its trading volume on a dollar volume or perhaps even a share volume basis, and take a subset of all securities that meet certain criteria along those matrix and implement it for a period of time. That will give you not only the data, but it is something that even people who aren't lifelong Manhattan residents can understand what we are doing, why we are doing it and can understand whether or not it worked or not.

Dr. HAYWORTH. Got it. And I appreciate those thoughts very much.

Mr. Weild, any thoughts about where such a pilot should be based or how it should be administered, so to speak?

Mr. WEILD. Sure. I think that you need a critical mass number of stocks to get the data to do the direct comparisons the micro market economists will want to look at. I think you are going to need on the order of 500 stocks over the course of 2 to 3 years, and I think if it is proven to be successful and adequate representation based on the market value, flow values, and volumes.

And again, I do think that allowing issuers, not independently, but in conversation with their institutional investors and with their value providers, like Cowen and Company, to have a discussion with them to make recommendations about what their tick sizes should be and then have the board make a decision, I think would tell the market an awful lot about what the real, what the right value is. There is a big difference. Capital Research, with nearly

a trillion dollars under management, is investing in very different stocks, for example, than Wasatch Advisors in Salt Lake City that is a growth company investor, and so I think that from having that direct input, I think people are largely rational within a tolerance, they will come up with a better answer, market forces will cause a better answer than we will.

Dr. HAYWORTH. Right.

Mr. SOLOMON. I also think simple is better. I totally agree with you; keep it simple. I also believe investors like round numbers. Round numbers are good. When you meet somebody, you tell them you are going to meet them at the corner of something and something, you don't tell them you are going to meet them in between the corner of something and something. It is the human condition, right? So I actually think if you put it in increments that are relatively straightforward that we all understand—nickels, dimes, quarters—are good things for people to really get their heads around, and it makes it a lot easier for people to understand exactly how this is going to work.

I do think, like Mr. Weild said, it needs some time because I will have to make some investments in order to bring this back. It won't just turn on all of a sudden. I will be looking at adding new research analysts. I will be making some up-front investment to see how we can sponsor companies more. So it will take time for it to work through the system. And of course, I am going to want to know that there is a commitment to this pilot program for some period of time because I am going to be making an upfront investment to see if I can get it to work for me as a CEO.

Dr. HAYWORTH. That makes a lot of sense. I thank you, sir, and I yield back.

Chairman GARRETT. The gentlelady yields back, and that brings us to the conclusion of the second panel, and the conclusion of today's hearing. Again, I thank you all very much for the illumination that you brought to this topic. And I very much thank you all for being here.

Without objection, I will be putting into the record three items, all of which are from SIFMA: a paper on displayed and nondisplayed liquidity, dated August 31st; a June 25, 2010, letter on market structure roundtable; and an April 29th of the same year concept release on equity market structure, which will all be part of the record, without objection.

The Chair notes that some Members may have additional questions for this panel, which they may wish to submit in writing. Without objection, the hearing record will remain open for 30 days for Members to submit written questions to these witnesses and to place their responses in the record.

And with that, this hearing is adjourned. Thank you, gentlemen. [Whereupon, at 11:55 a.m., the hearing was adjourned.]

A P P E N D I X

June 20, 2012

Written Statement of Daniel Coleman
Chief Executive Officer, GETCO

Before the
House Financial Services Subcommittee on Capital Markets and
Government Sponsored Enterprises

Market Structure: Ensuring Orderly, Efficient, Innovative and
Competitive Markets for Issuers and Investors

June 20, 2012

Chairman Garrett, Ranking Member Waters, and members of the Subcommittee:

I. Introduction

My name is Daniel Coleman and I am the Chief Executive Officer of GETCO, a leading global electronic market maker. I appreciate the opportunity to provide testimony regarding equity market structure.

The regular review of our capital markets, and the regulatory framework that applies to it, is critical to the continuing vibrancy of those markets. This review is more vital now than ever before because, over the last decade, investor confidence in our markets has slowly deteriorated, as nearly every facet of our financial and banking systems have in one way or another led investors to question the effectiveness, transparency, stability, fairness and overall legitimacy of how our markets manage risk, promote capital formation, allocate capital and operate fairly.

It started with the bursting of the Internet technology bubble in 2000, followed by accounting and investment banking scandals in 2001 and 2002, the mutual fund late trading and market timing disgraces of 2004, and culminated in the events of the last four years: (1) the credit bubble that initiated the 2008 financial crisis that nearly destroyed our financial and banking system; (2) the heart stopping May 6th 2010 “flash crash” that caused investors to doubt the operational stability of our national market system, and; (3) the recent events of this year that raise legitimate concerns about the role of technology in the capital formation process.

And, while critics of our current market structure pinpoint the lack of investor confidence solely on the shortcomings of our national market system, the last decade has also brought transformational and positive changes in how capital is allocated and investors access liquidity. These changes reflect why the U.S. markets are still the most dynamic, efficient and trusted markets in the world.

GETCO has witnessed first-hand these positive developments and we believe that if certain regulatory and operational changes to our current market structure are adopted that adhere to core principles—promoting competition, price discovery, efficiency, transparency, stability and fairness—investors will once again believe in the soundness of our financial, banking, and capital market systems and trust the financial community with their hard earned investing dollars. We look forward to participating and contributing to this discussion.

II. Background on GETCO

GETCO was founded in 1999 by two Chicago floor traders from the Chicago Board Options Exchange and the Chicago Mercantile Exchange who saw that their business of market making or “risk transfer” was at the beginning of a transformational shift from analog to digital—or in trading parlance from the “pit” to the “screen.” This transformation has occurred in nearly all asset classes and products—from stocks, like GM and GE that are listed on the New York Stock Exchange, to futures contracts tied to agricultural products, like corn and soybeans that trade on the CME. As a result, in the last 13 years GETCO has grown to trade on over 50 exchanges and trading venues around the world in cash and futures products across four asset classes – equities, fixed income, currencies and commodities. The firm currently has over 400 Associates located in Chicago, New York, Palo Alto, London, Singapore and Hong Kong.

GETCO's primary business is as an electronic market maker—which is akin to a floor trader or “specialist” of the last century—posting two-sided markets on exchanges around the world to help investors efficiently transfer the risk associated with holding a particular asset. The service GETCO provides allows investors to immediately access publicly available liquidity, while saving money on trading costs. In the U.S., GETCO is a registered market maker in over 4000 securities on various equity and options exchanges¹ and is the second largest Designated Market Maker on the New York Stock Exchange.

In 2008, GETCO expanded its core market making business by establishing GETCO Execution Services (“GES”)—a client services business that executes orders on behalf of other broker-dealers and institutional clients. Through GES, GETCO operates three distinct businesses that leverage the technology and expertise of a global market maker. These services—GETMatched, GETAlpha and GETRouted—are designed to meet new demands by clients for better execution, routing and algorithmic services. In 2010, we began expanding these offerings to European markets.

GETCO's Role as a Market Maker

Market makers such as GETCO have existed for hundreds of years and their role has stayed constant: to bridge the gap in time between when natural buyers and sellers enter the market. GETCO fundamentally believes that one of the primary purposes of a financial market is to allocate risk to those persons or entities best able to bear it. As natural counterparties do not necessarily meet in time, place, and size, market makers such as GETCO commit their own capital and assume a variety of financial risks until a natural counterparty can be found.

In performing this intermediation role, market makers do not take directional positions or make “bets” on the long term price of an asset. Instead, by providing continuous two-sided quotations, market makers allow consumers of liquidity (i.e., natural buyers and sellers) to immediately trade

¹ Registered Equity Market Maker: BATS; Direct Liquidity Provider: Nasdaq; Lead Market Maker: NYSE Arca, Designated Market Maker and Supplemental Liquidity Provider: NYSE; and Registered Option Market Maker: BATS Options, C2, Chicago Board Options Exchange, International Securities Exchanges, Nasdaq Options Market, NYSE Amex Options, and NYSE Arca Options.

Market Makers Provide Multiple Benefits to the Markets:

- **Lower trading costs** by reducing the costs associated with finding someone with whom to trade.
- **Reduce market volatility** by buying when others want to sell and selling when others want to buy.
- **Add liquidity and facilitate price discovery** by posting quotations against which other market participants can use to value their portfolios or trade.
- **Promote competition** among market centers and liquidity providers so that individual and institutional investors benefit from lower costs and access to diverse liquidity pools.

In exchange for these services, market makers generate revenue from the “Bid/Ask” spread, the difference between the buying price and selling price of a security. Numerous studies show that this spread has dramatically fallen over the last 20 years. This narrower spread is a direct cost savings to investors.

Automation is used by today’s electronic market makers to manage their risks by controlling how and when orders are placed and modified. By using technology to better control their risks, market makers can offer better prices and reduce trading costs to investors. Electronic market makers provide the same benefits to market participants as traditional market makers but on a greater scale:

- Dampen market volatility
- Reduce trading costs
- Provide liquidity
- Facilitate price discovery
- Provide safe and efficient method of risk transfer

GETCO's Client Services Business

GETCO's client services business offers three high-tech trading solutions that help investors solve their execution needs:

- **GETAlpha:** An execution algorithm for U.S. equities that uses the same high-tech trading tools as a dedicated electronic market maker. By leveraging GETCO's proprietary trading systems and expertise, GETAlpha allows institutional investors to place trades with minimal market impact and protects against information leakage or detection.
- **GETRouted:** A smart order routing solution for U.S. equities that provides institutional investors with the ability to completely customize their order execution strategy.
- **GETMatched:** An Alternative Trading System registered with the SEC that provides access to the dedicated liquidity of GETCO's electronic market maker. GETMatched is the 5th largest OTC platform or "dark pool" by volume and executes trades only when there is a match at the National Best Bid and Offer (NBBO) or better.

All client offerings are fully optimized for interaction with each other.

III. U.S. Equity Market Structure

Over the last 15 years, technology advancements and regulatory changes have created a U.S. equity market that is open, efficient, stable, transparent, competitive, and innovative. From the standpoint of choice, access, and cost, investors are better off than ever before in today's markets. Execution speeds have improved, trading costs are lower, and liquidity has increased, as measured by tighter bid-ask spreads and larger size in the consolidated market order book. And despite such dramatic improvements in how our markets function, investor confidence is as broken as it has ever been. It has been shaken by a series of high-profile events that paint a picture of an overly complex, fundamentally fragile market-system. In spite of many advances, investors—both individual and institutional-- feel out-gunned, over-whelmed and out-of-touch.

A. Post-May 6th Reforms

The market events of May 6, 2010 revealed flaws in the U.S. equity market structure. GETCO is very supportive of the SEC's and CFTC's well-reasoned reforms since then, which limit the potential for another, similar event. Within the first few months, the SEC led the exchanges and FINRA in implementing single stock circuit breakers, eliminating stub quotes, and establishing clearer rules for breaking trades that are clearly erroneous. This quick action went a long way to restoring confidence in the markets.

In addition, the SEC and CFTC established a Joint Advisory Committee on Emerging Regulatory Issues composed of industry leaders and investor representatives. This Committee made well-reasoned recommendations for further regulatory reforms,² some of which the SEC has already adopted.

For example, a few weeks ago, the SEC approved the securities exchanges' and FINRA's Volatility Plan (the "Plan")-- a market-wide limit up-limit down mechanism to address extraordinary market volatility. GETCO supported this new Plan, which is intended to replace the single-stock circuit breaker pilot that was put in place beginning in June 2010. This new Plan improves upon the single-stock circuit breaker pilot by preventing trades in NMS stocks at prices outside of appropriate pre-set limits. The Plan also retains the concept of trading pauses when more fundamental price moves occur.

In addition, in November 2011, the SEC adopted a ban on naked sponsored access and required broker-dealers that provide access to trading on an exchange or alternative trading system to implement prudent risk management controls. GETCO supports these requirements³ and many other jurisdictions have, or are considering, similar measures. In its market making business, GETCO trades its own capital so risk management is an essential component of our operations. Accordingly, GETCO supported the market access rules because any market participant with the

² Recommendations Regarding Regulatory Responses to the Market Events of May 6, 2010, Summary Report of the Joint CFTC-SEC Advisory Committee on Emerging Regulatory Issues (February 18, 2011).

³ Letter to Elizabeth Murphy, Secretary, SEC from John McCarthy, General Counsel, GETCO, dated April 1, 2010 (commenting on the SEC's proposed Risk Management Controls for Brokers or Dealers with Market Access).

ability to directly enter orders onto a market should be subject to the same pre-trade risk management and supervisory procedures as registered broker-dealers.

Finally, GETCO supports the creation of a Consolidated Audit Trail⁴ to provide the SEC and the SROs with efficient access to a robust and effective cross-market order and execution tracking system. We do not, however, believe that a “real time” audit trail is necessary to achieve this objective and would impose significant costs on both regulators and the industry. Instead, audit trail information received on a delayed basis would provide the same benefits as real-time information, at a substantially lesser cost.

B. Roles, Obligations and Incentives for Market Makers

Despite the worldwide financial turmoil of the last several years, U.S. markets are still the most liquid and efficient in the world. GETCO believes strongly that a significant reason for the high quality of U.S. markets is the liquidity provided by market makers.

While all market participants contribute to efficient and liquid markets, a market maker’s primary activity is to facilitate trades by buyers and sellers either on an exchange or in the OTC markets. Market makers come in different shapes and sizes, but they perform many similar functions. In general, a core principle of market making is the immediate provision of liquidity to buyers and sellers – either directly to a market maker’s customers or indirectly through the public markets. Market makers create a steady and continuous stream of liquidity – buying when investors and other market participants are selling and selling when they are buying. By providing liquidity on a continuous basis, market makers facilitate the efficient transfer of risk.

In response to the events of May 6, 2010, the SEC-CFTC Joint Advisory Committee on Emerging Regulatory Issues recommended that the SEC evaluate whether incentives or regulations can be developed to encourage persons who engage in market making strategies to regularly provide buy and sell quotations that are “reasonably related to the market.”

GETCO supports this recommendation and believes that fair questions have been raised about current market rules that impose no real quoting or trading requirements on market makers, nor

⁴ Letter to Elizabeth Murphy, Secretary, SEC from John McCarthy, General Counsel, GETCO, dated August 10, 2010 (commenting on the SEC’s proposed Consolidated Audit Trail).

provide adequate incentives. As articulated in our letter, to the SEC staff in July of 2010,⁵ we, along with Virtu Financial and Knight Securities, believe the obligations associated with market making need to be modernized to reflect the current electronic markets that evolved over the last 10 years. By encouraging market participants to undertake clear and meaningful obligations, we believe the likelihood of instances of price dislocations like the one that occurred on May 6th 2010 would be substantially reduced.

C. Undisplayed Liquidity

As the SEC noted in its Concept Release on Equity Market Structure,⁶ undisplayed liquidity is not a new phenomenon. Dark liquidity in the equity markets takes the form of undisplayed orders carried by floor brokers and block orders held upstairs, as well as over-the-counter market makers that trade with retail customer orders. These non-displayed pools of liquidity are beneficial and serve numerous legitimate functions, including improving fill prices, reducing market impact and information leakage, lowering transaction fees, and fostering innovation.

The impact of undisplayed liquidity on the quality of public price discovery is an area of inquiry by policymakers in many jurisdictions around the world. Publicly disseminated prices serve an important role in price discovery and the challenge for regulators is to strike the right balance in protecting the important role that public markets play in fostering price discovery, while also recognizing the interests served by undisplayed pools of liquidity. This inquiry requires policymakers to balance the public good that is associated with encouraging market participants to publicly display orders with the interests of each individual retail and institutional customer to get the best execution for its order.

GETCO believes that there are incremental market-based changes that the SEC could make that would promote price discovery, without reducing the choices that investors have regarding where to trade and preserving the ability of new market centers to innovate, develop, and compete. As discussed in more detail below, GETCO believes that the SEC could adjust tick sizes for certain high and low priced securities, treat actionable indications of interest (IOIs) as

⁵ Letter to Robert Cook, Director, Division of Trading and Markets, SEC dated July 9, 2010 from John A. McCarthy, General Counsel, GETCO, LLC, Christopher R. Concannon, Partner, Virtu Financial, LLC, and Leonard J. Amoroso, General Counsel, Knight Capital Group, Inc.

⁶ Securities Exchange Act Release No. 61358 (Jan. 14, 2010), 75 FR 3594 (Jan. 21, 2010).

quotations, and lower the threshold for requiring display into the public quote stream of IOIs and other quotations.

1. Tick Sizes

GETCO believes that there are optimal tick sizes for securities, which are not always the same as the narrowest tick size. Optimal tick size is important to fostering price discovery in the public market and promoting efficient markets. The optimal tick size depends on the liquidity of a stock, its price and volatility.

SEC rules currently establish minimum tick sizes at 1 cent for securities priced above \$1.00. This current minimum tick size requirement creates inefficiencies and has detrimentally affected the price discovery process. As stock prices decline, the tick size becomes a greater percentage of the price of the stock - incenting internalization and hidden liquidity in certain low priced securities. By contrast, in Europe, in the absence of regulation around tick size, the exchanges mutually agreed on a tick size for a range of prices. As the stock price decreases, so does the tick size.² GETCO believes that all orders in the U.S., especially retail orders, would routinely receive better-priced executions if the minimum tick size were correlated to the share price of the security.

An example of this can be seen in Citigroup, which - until its reverse split - was a low priced, but highly liquid stock. A firm's profit from trading against its client orders in Citigroup - a \$5 stock with a 1 cent / 20 basis point spread - was significantly higher than the profit made from internalizing a client's order in Microsoft - a \$30 stock with a 1 cent / 3 basis point spread. As a result of an inappropriately large tick size, the Citigroup orders - as with other low priced, high volume securities - were less likely to be traded on the public transparent markets.

² To illustrate, in the U.S., all stocks under \$10.00 have a tick size that is greater than 0.1% of the stock price. By contrast, in Europe, the tick size is never more than 0.1% of the stock price. Also, in the U.S., all stocks above \$50.00 have a tick size that is less than 0.02% of the price. In Europe, by contrast, the tick size of a stock is never less than 0.02% of the price.

2. Actionable Indications of Interest

GETCO supports transparency and its role in the public price discovery process. We support the SEC's proposal to treat actionable IOIs as quotations, subject to the same obligations as explicit firm quotes under SEC rules. Actionable IOIs convey information that there is actionable trading interest in a security, which is the same as the information conveyed by a firm "bid" or "offer."

GETCO's alternative trading system, GETMatched, does not display orders to any users of the trading system. Moreover, GETMatched does not interact with IOIs from other trading venues. We believe that when participants in exchanges or ATSs have access to information about potential trades that other market participants do not have, it creates a two-tiered market that is inconsistent with an efficient market structure.

3. Lowering the Threshold for Order Display and Execution Access

GETCO supports the SEC's proposal to lower the threshold at which ATSs must display the best priced orders in the public quotation stream. Currently, if an ATS displays orders to more than one person, its best-priced orders must be publicly disseminated when the ATS accounts for 5% or more of the average daily volume for a stock. The ATS must also provide broker-dealers the ability to trade with the displayed order. The SEC proposed to lower the threshold to 0.25% from 5%. GETCO agrees with the Commission that lowering this threshold would reduce the potential for a two-tiered market and improve the quality of publicly available quotation data.

D. Liquidity Rebates

Markets have always rewarded or incentivized market participants to provide liquidity. The practice by some trading venues of offering rebates to participants that provide passive liquidity leveled the playing field by opening up liquidity provision to competition. Rebates allow market makers to post better prices on *public markets*, which directly improve the executions of liquidity takers. In the absence of rebates, effective spreads would be wider, and wider spreads are a cost borne by liquidity demanders in the same way as explicit fees.

Rebates allow market makers on public trading venues to post competitive prices, with the result of reducing transaction costs and increasing liquidity. Because of the ability of liquidity providers to post better quotes, average investors, whose orders are frequently internalized at the

prices displayed in the public market, also have lower transaction costs as a result of these rebates.

The rebates paid to liquidity providers are generally funded through explicit fees paid by liquidity takers. However, when this explicit fee is paid by investors to trade with a better priced quote, the investor receives a better net execution price. A liquidity taker that trades on a market with the best quoted price and transparent “taker” fees that are less than the minimum trading increment will always be receiving the best net price. For this reason, it is important that policymakers consider all costs – implicit and explicit – in comparing the costs to liquidity demanders associated with maker-taker models and other pricing models.

GETCO does not employ unique trading strategies that are designed solely to earn a rebate. The firm is a market maker on exchanges that offer a rebate for posting passive liquidity and we are market makers on exchanges that do not – such as the NYSE. Rebates, when offered, are incorporated into determining the price at which we are able to quote a security. On markets on which we earn a rebate, we are able to post much tighter markets. GETCO makes markets on trading venues that employ the maker-taker pricing model, as well as on those that do not.

Nevertheless, rebates can create a conflict for brokers responsible for making routing decisions for their customers. This is particularly the case when trading venues offer rebates to brokers for *taking* liquidity. These rebates are akin to payment for order flow and broker preferencing arrangements that have long existed in the equity markets. It is important that regulators examine all these conflicts in determining how to best ensure that customers’ interests are placed above their brokers.

Finally, the controversy regarding rebates offered by trading venues indicates that institutional investors are not confident about where or how their order is being executed. The SEC has historically championed the rights of the retail investor, but generally felt institutional investors were sophisticated enough to manage on their own. In fact, there is a growing digital divide even amongst professional participants.

To help institutional investors navigate this divide, there needs to be greater clarity around order execution quality for professional participants. Furthermore, institutional investors need to understand the trade-offs and financial incentives involved in routing decisions by their brokers.

Additional transparency and better order execution analysis would help to alleviate concerns around gaming, manipulation and information leakage; and return a level of control and confidence to institutional participants.

E. Co-Location and Data Feeds

Today's professional traders use co-location and proprietary data feeds offered by market centers. The securities laws require exchanges to provide fair access to these tools to all market participants and represent market responses allowed by advances in communications and broadband technology.

1. Co-Location

Co-location is the modern day trading floor. Co-location is where a trading platform offers space in its data center for members to locate their own computer hardware to reduce the time it takes to receive information and place orders on the market.

Historically, market makers and other professional market participants have wanted to be as close as possible to the center of price discovery. Market makers need to manage the risk associated with making markets and speed; certainty of execution and proximity allow better risk management. Before the advent of electronic trading, this meant buying a "seat" or membership on an exchange. Exchange floors have now largely been replaced with computer "matching engines" and today's market makers need to be as close to the center of price discovery in the exchange's matching engine as possible.

We believe that co-location is a positive development because it equalizes access for participants who wish to be near the center of price discovery. Any market participant that determines that speed is an essential component to its trading strategy or risk management can invest in co-location. Most brokers are either co-located themselves or access markets through member firms that are co-located.

2. Data Feeds

As the SEC noted in its Equity Market Concept Release, the information in individual market center data feeds generally reaches market participants faster than the same information in the

consolidated data feeds. The slower speed of the consolidated data feed is attributable in large part to the extra step required for data to be consolidated and redistributed. As a market maker, GETCO subscribes to data feeds directly from the exchanges. Having the most up-to-date information on market prices allows GETCO to better manage its risks, which in turn allows the firm to post better priced quotations.

GETCO also notes that, if proprietary data feeds were prohibited or delayed, large market participants would have an informational advantage over small participants. Large participants would have immediate access to their own trading activity, while other market participants would have to wait until they received the consolidated data feed or delayed exchange data feed.

IV. Dodd-Frank Act, Title VII

The Financial Crisis of 2008 prompted widespread realization among regulators, legislators and the general public that the derivatives markets were opaque, lightly regulated and ultimately backstopped by individual taxpayers when governments were forced to concede that certain institutions were simply “too big to fail.” The Dodd-Frank Act attempts to address these issues by:

- limiting the risk government-backed institutions can take making proprietary trades;
- increasing transparency around derivative exposure through the mandated clearing of standardized products; and
- facilitating the entrance of new participants to create a more competitive, diverse market place.

Clearing in the swaps market is the critical first step in this process. There’s little disagreement about the systemic benefits of clearing the most standardized and liquid swaps. By substituting the clearing house as the counterparty in a swaps transaction, it reduces counterparty credit risk by mutualizing exposure. A clearing house also provides an objective and robust process for monitoring and managing risk and requires clearing members to contribute margin or collateral to insure that the clearing house can withstand the default of members.

In addition to these direct risk mitigation benefits that clearing houses provide, a cleared swaps market has the potential to allow a much wider array of participants to provide liquidity. Non-bank liquidity providers, such as GETCO, who do not enjoy a federal guarantee, are ready, willing and able to provide liquidity in the swaps market as soon as central clearing is established. For this reason, broad access to clearing houses – together with robust measures to ensure the safety and soundness of clearing houses – is critical to achieving the goal of reducing systemic risk.

The ability of a greater diversity of market participants to act as dealers in a cleared swaps market, would reduce the systemic risk we face today with a few “too big to fail” banks as the sole counterparties in these swaps markets. This diversification is precisely what was intended when the laws were envisioned and will ultimately increase the overall integrity and resiliency of the swaps markets by decreasing the risk of systemic failure.

Thank you.

**Testimony of Kevin Cronin, Global Head of Equity Trading, Invesco
on Behalf of the Investment Company Institute**

**“Market Structure: Ensuring Orderly, Efficient, Innovative and Competitive
Markets for Issuers and Investors”**

**Subcommittee on Capital Markets and Government Sponsored Enterprises
Committee on Financial Services
U.S. House of Representatives**

June 20, 2012

Thank you Chairman Garrett, Ranking Member Waters and members of the Subcommittee for the opportunity to speak here today. My name is Kevin Cronin; I am Global Head of Equity Trading for Invesco. Invesco is a leading independent global asset management firm with operations in more than 20 countries and assets under management of over \$632 billion.

I am pleased to participate on behalf of the Investment Company Institute at this hearing examining the structure of the U.S. securities markets. ICI is the national association of U.S. investment companies, including mutual funds, closed-end funds, exchange-traded funds (“ETFs”), and unit investment trusts (“UITs”). The structure of the securities markets has a significant impact on ICI members, who are investors of over \$13 trillion of assets and who held 29 percent of the value of publicly traded U.S. equity outstanding at the end of 2011. ICI members are institutional investors, but invest on behalf of over 90 million individual shareholders.¹

Funds and their shareholders therefore have a strong interest in ensuring that the securities markets are highly competitive, transparent and efficient, and that the regulatory structure that governs the securities markets encourages, rather than impedes, liquidity, transparency, and price discovery. Consistent with these goals, ICI has strongly supported efforts to address issues that may impact the fair and orderly operation of the securities markets and investor confidence in those markets and has long advocated for regulatory changes that would result in

¹ Households are the largest group of investors in mutual funds. Altogether, 52.3 million households, or 44 percent of all U.S. households, owned mutual funds as of 2011. Mutual funds also managed 55 percent of the assets in 401(k) and other defined contribution retirement plans and 45 percent of the assets in IRAs at the end of 2011. For more information on the U.S. fund industry, see 2012 Investment Company Institute Fact Book at www.icifactbook.org.

more efficient markets for investors.² We commend the Subcommittee for holding this hearing to examine these critical issues.³

As the title of the hearing suggests, orderly, efficient, innovative and competitive securities markets are essential for both issuers and investors. Achieving such markets requires fundamental elements such as: robust price discovery; transparency and fairness; sensible regulation with diligent oversight and enforcement; competition which fosters innovation and efficiencies; broad-based and diverse participation; and most critically, the participation of long-term investors. Long-term investors are the cornerstone of the capital formation process and their participation in the primary markets and secondary trading markets is fundamental to well-functioning securities markets overall. As such, it is critically important that the markets operate in the best interests, and foster the confidence, of long-term investors.

Unfortunately, over the past several years, long-term investor confidence has been challenged by a series of scandals, financial crises, and technological mishaps affecting the operations of exchanges, broker-dealers and automated trading systems -- including, most recently, the problems surrounding the Facebook IPO.

To ensure long-term investor confidence, it is incumbent upon regulators to address issues raised by developments in the structure and operation of the securities markets and the impact of those developments on investors. ICI believes that regulators have fallen short of this important objective, most likely because the implementation of the Dodd-Frank Act has diverted SEC resources to mandated rulemaking. Significantly, numerous issues raised by the SEC's concept release examining the structure of the U.S. securities markets have not been addressed, including issues surrounding high frequency trading and undisplayed liquidity, as well as the adequacy of information provided to investors about their orders.⁴

² For a comprehensive list of, and links to, ICI's key comment letters on trading and market structure issues, *see* Appendix.

³ While our statement focuses on the impact of market structure changes in the equity markets, ICI members also are active participants in the derivatives and fixed-income markets. Ongoing changes to the structure of those markets will have an impact on the manner in which funds execute trades and interact with other market participants. We therefore strongly support a robust examination of the current market structure in the non-equity markets.

⁴ *See* Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated April 21, 2010; available at <http://www.ici.org/pdf/24266.pdf>.

In addition, the events of May 6, 2010 brought to the forefront several inefficiencies in the current market structure. Several of these issues have been addressed by regulators; nevertheless, issues relating to the role of market makers and high frequency traders during the “flash crash” remain unresolved.

As discussed further below, ICI believes it is time for regulators and market participants alike to address, and take action on, many of the difficult and complex issues that have concerned investors for several years, including:

- Issues surrounding automated trading and high frequency trading, including the number of cancelled orders in the markets;
- The need for enhanced surveillance capabilities to detect potentially abusive and manipulative trading practices;
- Conflicts of interest that exist in the markets, particularly those surrounding liquidity rebates and the creation of new and complex order types;
- The need for increased transparency of order routing and execution practices;
- Difficulties surrounding capital formation, particularly for small and mid-sized companies, and the need to examine the implementation of higher minimum quote variations (*i.e.*, greater than \$.01) for certain securities; and
- Issues associated with undisplayed liquidity, particularly those related to broker-dealer internalization.

Regulators state that they have been reluctant to act on many of these issues, citing the insufficiency of data to ensure that any new or revised regulations will not adversely impact the securities markets. In our judgment, if the data currently available is insufficient to make these determinations, steps should be taken to obtain such data. As discussed further below, this might be done by instituting pilot programs to generate data, such as in the areas of liquidity rebates and minimum spreads.⁵

Impact of Automated Trading and High Frequency Trading on Funds

One of the primary drivers of changes to the structure of the securities markets over the past several years has been the rapid evolution of technologies for generating, routing and executing orders and related improvements to the

⁵ Pilot programs allow regulators to gather the data necessary to take a measured approach to reforms. If regulations are too restrictive, they may unintentionally limit the use of evolving market practices and technological developments and thus impede funds' use of new and innovative trading tools and trading venues. If regulations are too onerous or costly for some market participants, those participants may decide not to offer certain products or services to investors.

speed, capacity and sophistication of the trading functions available to investors. Funds rely heavily on technology for the efficient execution of their trades.

To be clear, we believe that investors, both retail and institutional, are in many respects better off now than they were just a few years ago. Investors have much greater control over how their trades are executed. The increased number and variety of trading tools also has resulted in less dependence on “high touch” trading and has contributed to lower overall trading costs and improved efficiency, certainly for the most liquid securities. On the other hand, the rise of automated trading and high frequency trading has forced funds and other institutional investors to modify the manner in which they trade to protect their proprietary trading strategies. Funds also have become more diligent in choosing their counterparties and in understanding where their orders are routed and the consequences of those routing decisions.

Clearly, high frequency trading has dominated the debate over the virtues of automated trading. ICI believes certain high frequency trading strategies arguably bring several benefits to the securities markets and to investors, including providing liquidity and tightening spreads in certain types of stocks. At the same time, several practices that have become associated with high frequency trading have created concerns, as discussed below.

Cancelled Orders

We believe that regulators and market participants must act to address the increasing number of order cancellations in the securities markets, particularly those that are cancelled shortly after submission. While order cancellations related to making markets is one thing, orders sent to the market with no intention of being executed before cancellation is quite another. These orders tax the markets’ technological infrastructure, and under the right circumstances, could interrupt the ability to process trades in an orderly fashion. In addition, ICI members report that certain of the practices and strategies surrounding cancellations often are designed to detect fund trading of large blocks of securities and to trade with or ahead of those blocks to the detriment of investors.

We have recommended on several occasions that regulators examine whether a fee should be imposed on cancelled orders above a certain ratio of orders to executed transactions, designed to discourage the current risk free use of certain types of orders and to protect the integrity of the markets’ infrastructure. While several exchanges have recently proposed such fees, we believe those proposals will be ineffectual; they will impact only the most extreme outliers, and the fee associated with the proposals is so small that it would not act as a deterrent. We therefore urge regulators and market participants to address

concerns regarding cancelled orders and consider truly meaningful fees or other deterrents that would adequately address this behavior.

Addressing Market Manipulation and Abuse

Recent technological advances in trading have allowed practices that are improper or manipulative in nature to be employed more easily and cheaply. This, in turn, has made trading more challenging for funds. The varied and complex trading practices used by market participants today also often makes it difficult to distinguish between legitimate and disruptive trading practices in a number of situations. We support action by regulators to clearly define practices involving automated trading strategies and high frequency trading strategies that may constitute market manipulation. In addition, we strongly support regulators having access to accurate, timely and detailed information about market participants and trades that are executed and the establishment of a more robust transaction reporting regime to enable regulators to monitor the activities of firms, ensure compliance with regulations, and monitor for market abuses.⁶

Addressing Potential Conflicts of Interest

Liquidity Rebates

The benefits and drawbacks of so-called “liquidity rebates” must be examined.⁷ Brokers are incentivized to make routing decisions based on the availability and amount of liquidity rebates offered by an exchange. Further, liquidity rebates subsidize certain of the high frequency trading strategies discussed above. At the same time, the benefits of liquidity rebates to investors are doubtful -- investors do not receive these rebates directly and arguably also do not receive the benefits of rebates indirectly.

We firmly believe that more must be learned about the effects of this practice on investors and the markets. We therefore recommend that the SEC work with the exchanges and other market participants to establish a pilot program where a certain set of securities would be prohibited from being subject

⁶ ICI provided recommendations on certain aspects of the SEC’s proposal to develop, implement, and maintain a consolidated audit trail (“CAT”) and a central repository for the CAT data regarding the trading of listed equities and options. See Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated August 9, 2010; available at <http://www.ici.org/pdf/24477.pdf>

⁷ The practice of providing liquidity rebates is associated with what is often referred to as the “maker/taker” model. In the maker/taker model, trading venues typically charge fees to market participants who “take” liquidity and pay rebates to market participants who “make” liquidity by placing orders.

to liquidity rebates. In this manner, the SEC can examine the data generated about liquidity rebate practices and determine whether rulemaking is necessary to address concerns in this area.

ICI does not believe that prohibiting liquidity rebates would negatively impact competition between markets. All trading venues should compete first on the basis of innovation, differentiation of services and ultimately, on the value their model of trading presents to investors; not on the amount of money rebated to market participants.

Order Types

In the race for increased market share, exchanges and alternative trading venues continue to create various types of orders to cater to market participants who create strategies and desire a vehicle through which to implement those strategies. Many of these order types facilitate strategies that can benefit market participants at the expense of long-term investors or that are potentially abusive or manipulative. In addition, ICI members report that the transparency surrounding these order types is severely lacking. We therefore recommend that regulators vigorously examine the specific order types that exchanges and other trading venues offer and any conflicts of interest raised by the use of these order types. Sufficient transparency of the details of order types offered by exchanges and other trading venues also must be ensured and such information must be readily and easily available to investors.

Transparency of Order Routing and Execution Practices

More transparency is needed regarding the order routing and execution practices of market participants. In many cases, our members are in a position to obtain the necessary routing and execution data from broker-dealers and trading venues. We are concerned, however, that many investors are not privy to this level of transparency.

At a minimum, we recommend that brokers, upon request from a customer, be required to provide certain standardized information about an execution including the type of execution venue used (*i.e.*, an exchange or an alternative trading venue), the capacity in which the trade was executed (*i.e.*, agency vs. principal), and each destination to which an order was routed (whether an execution was received or not). Increased information regarding payments and other incentives provided or received to direct order flow to particular trading venues also would be valuable. Such increased transparency should assist in better understanding conflicts of interest that exist and would allow investors to make better informed investment decisions.

Tick Sizes and Minimum Quote Variations

The difficulties for small companies coming to market in the United States have been well documented over the last several years. Various proposals have been set forth to stimulate capital formation and to provide support for small companies that desire to come to market. One of these proposals is to widen spreads (*i.e.*, minimum quote variations), particularly for less liquid stocks.

Since penny spreads were implemented, the average trade size has been significantly reduced, making it more difficult for funds to trade large blocks of securities, particularly in small-cap and less liquid stocks. We therefore believe it is necessary to examine ways to increase market liquidity and the depth of markets in securities that have not benefited from the move to penny spreads. Specifically, we recommend that a pilot program be established to examine wider spreads in certain stocks.⁸ We believe this pilot should be wide ranging, with different minimum spreads established for different types of stocks. A pilot program would generate valuable data on the impact on liquidity in these stocks, allowing the SEC to determine whether changes to the minimum quoting variation should be implemented.

Undisplayed Liquidity

While technological developments have resulted in improvements for investors, these changes also have shifted the dynamics of trading for funds, driving more fund orders away from the “lit” markets, such as the traditional exchanges, towards the use of undisplayed liquidity.

Funds have long been significant users of undisplayed liquidity. For ICI members that frequently execute large orders, undisplayed liquidity, and the venues that provide such liquidity (*i.e.*, dark pools), lessen the cost of implementing trading ideas and mitigate the risk of information leakage. Protecting orders from information leakage is a primary component of a fund’s day-to-day trading responsibilities; dark pools allow institutional investors, to avoid transacting with market participants who seek to profit from the impact of the public display of large orders to the detriment of funds and their shareholders.

We recognize that while the use of undisplayed liquidity brings certain benefits to funds, there are concerns about its impact on the price discovery process. Ideally, funds would like as many orders as possible to be executed in the

⁸ The recent JOBS Act requires the SEC to conduct a study regarding the impact that quoting in penny increments has had on the securities markets, including on liquidity for the securities of small and mid-cap issuers and on market makers in those securities. The JOBS Act also gives the SEC authority, based upon the results of its study, to implement rules that would increase the minimum trading increment for securities of “emerging growth companies.”

lit markets. ICI therefore has strongly supported efforts to provide incentives for market participants to use transparent orders. Until we create a more efficient market structure for the execution of institutional sized orders, however, it is imperative that venues providing undisplayed liquidity remain available to funds and that the regulations overseeing these venues facilitate their continued use.

Broker-Dealer Internalization

Broker-dealer internalization (*i.e.*, where a broker internally executes against its own customer orders, taking the other side of trade) accounts for a significant percentage of the total share volume of stocks, and therefore undisplayed liquidity - more than the share volume attributed to dark pools as a whole. Internalized order flow also represents liquidity that funds do not have an opportunity, for the most part, to trade against.

Internalization raises a variety of concerns. For example, internalization may increase market fragmentation because it can result in customer orders not being publicly exposed to the market. In addition, it may raise conflicts of interest between broker-dealers and their customers because broker-dealers may execute customer orders at the displayed quotations, foregoing the opportunity for price improvement in order to maximize their profits.

We recommend that the SEC take action to ensure that internalized orders receive best execution. Specifically, any internalized order should be provided with “significant” price improvement.⁹ This requirement could result in more customer orders being exposed to the market if the amount of internalized orders is reduced, thus furthering public display of orders and potentially improving price discovery.

* * * * *

Thank you and I look forward to answering any questions.

⁹ We question whether providing price improvement to internalized orders in, for example, increments of hundredths of a penny is providing meaningful price improvement.

Appendix**Key ICI Comment Letters and Statements on Market Structure Issues**

Order Execution Obligations: Letter from Craig S. Tyle, Senior Counsel, Investment Company Institute, to Jonathan G. Katz, Secretary, Securities and Exchange Commission, dated January 16, 1996; available at <http://www.ici.org/pdf/7561.pdf>

Regulation of Exchanges and Alternative Trading Systems: Letter from Craig S. Tyle, General Counsel, Investment Company Institute, to Jonathan G. Katz, Secretary, Securities and Exchange Commission, dated July 28, 1998; available at http://www.ici.org/pdf/comment98_reg_exch_ats.pdf

Market Fragmentation Concept Release: Letter from Craig S. Tyle, General Counsel, Investment Company Institute, to Jonathan G. Katz, Secretary, Securities and Exchange Commission, dated May 12, 2000; available at <http://www.ici.org/pdf/11894.pdf>

Subpenny Concept Release: Letter from Craig S. Tyle, General Counsel, Investment Company Institute, to Jonathan G. Katz, Secretary, Securities and Exchange Commission, dated November 20, 2001; available at http://www.ici.org/policy/comments/01_SEC_SUBPENNY_COM

Regulation NMS: Letter from Ari Burstein, Associate Counsel, Investment Company Institute, to Jonathan G. Katz, Secretary, Securities and Exchange Commission, dated June 30, 2004; available at http://www.ici.org/policy/markets/domestic/04_sec_nms_com

Disclosure of Short Sales and Short Positions: Letter from Ari Burstein, Senior Counsel, Investment Company Institute, to Florence Harmon, Acting Secretary, Securities and Exchange Commission, dated December 16, 2008; available at <http://www.ici.org/pdf/23128.pdf>

Amendments to Regulation SHO (Short Selling): Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated June 19, 2009; available at http://www.ici.org/policy/comments/cov_comment/09_sec_short_sale_com

U.S. Senate Market Structure Hearing: Statement of the Investment Company Institute, Hearing on “Dark Pools, Flash Orders, High Frequency Trading, and Other Market Structure Issues,” Securities, Insurance, and Investment Subcommittee, Committee on Banking, Housing & Urban Affairs, U.S. Senate, October 28, 2009; available at <http://www.ici.org/pdf/23925.pdf>

Flash Orders: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated November 23, 2009; available at <http://www.ici.org/pdf/23973.pdf>

Non-Public Trading Interest: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated February 22, 2010; available at <http://www.ici.org/pdf/24142.pdf>

Market Access: Letter from Ari Burstein, Senior Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated March 29, 2010; available at <http://www.ici.org/pdf/24210.pdf>

SEC Concept Release on Equity Market Structure: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated April 21, 2010; available at <http://www.ici.org/pdf/24266.pdf>

SEC Market Structure Roundtables: Letters from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated June 1, 2010 and June 23, 2010; available at <http://www.ici.org/pdf/24361.pdf> and <http://www.ici.org/pdf/24384.pdf>

Circuit Breakers: Letters from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated June 3, 2010 and July 19, 2010; available at <http://www.ici.org/pdf/24364.pdf> and <http://www.ici.org/pdf/24438.pdf>

Large Trader Reporting System: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated June 22, 2010; available at <http://www.ici.org/pdf/24381.pdf>

Clearly Erroneous Executions: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated July 19, 2010; available at <http://www.ici.org/pdf/24437.pdf>

Consolidated Audit Trail: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and

Exchange Commission, dated August 9, 2010; available at <http://www.ici.org/pdf/24477.pdf>

European Commission Review of MiFID: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Directorate General, European Commission, dated February 2, 2011; available at <http://www.ici.org/pdf/24946.pdf>

IOSCO Consultation on Dark Liquidity: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Werner Bijkerk, Senior Policy Advisor, IOSCO, dated February 11, 2011; available at <http://www.ici.org/pdf/24968.pdf>

Limit Up-Limit Down System: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated June 22, 2011; available at <http://www.ici.org/pdf/25295.pdf>

Dodd-Frank Act Short Sale Reporting Study: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated June 23, 2011; available at <http://www.ici.org/pdf/25297.pdf>

IOSCO Consultation on Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Werner Bijkerk, Senior Policy Advisor, IOSCO, dated August 12, 2011; available at <http://www.ici.org/pdf/25408.pdf>

Regulatory Action on Short Selling in the European Union: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Steven Maijoor, Chair, European Securities and Markets Authority, dated August 17, 2011; available at <http://www.ici.org/pdf/25428.pdf>

ESMA Consultation on Guidelines on Systems and Controls in a Highly Automated Trading Environment: Letter from Karrie McMillan, General Counsel, Investment Company Institute, to Steven Maijoor, Chair, European Securities and Markets Authority, dated October 3, 2011; available at <http://www.ici.org/pdf/25546.pdf>

NASDAQ Market Quality Program: Letter from Ari Burstein, Senior Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated May 3, 2012; available at <http://www.ici.org/pdf/26142.pdf>

NYSE Arca Fixed Incentive Program: Letter from Ari Burstein, Senior Counsel, Investment Company Institute, to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, dated June 7, 2012; available at <http://www.ici.org/pdf/26227.pdf>

Testimony of Joseph C. Gawronski
President & COO, Rosenblatt Securities

Before the
United States House of Representatives, Committee on Financial Services
Subcommittee on Capital Markets and Government Sponsored Enterprises

"Market Structure: Ensuring Orderly, Efficient, Innovative and Competitive Markets for Issuers and Investors"

June 20, 2012

Chairman Garrett, Ranking Member Waters and members of the subcommittee, thank you for convening today's hearing on equity market structure. I am pleased to offer the views of Rosenblatt Securities about this topic.

My name is Joe Gawronski, and I am Rosenblatt's president and chief operating officer. Rosenblatt is an agency broker serving institutional investors in the US equity market. We are pure agents, who seek to execute trades on the best possible terms for our clients. We do not engage in proprietary or principal trading, or own or operate any exchanges or dark pools. Rosenblatt is also a leading global authority on market structure. Traders, investors, exchanges and governments all around the world rely upon our independent, granular analysis of the rules, regulations, competitive dynamics and behavior of participants in equity and derivatives markets globally.

We have studied extensively the massive changes to US equity market structure that have occurred since the US Department of Justice alleged widespread price-fixing among dealers on the Nasdaq Stock Market in 1996. We've also lived through them, as brokers representing institutional orders in the market.

We believe that there are **two major points** regarding market structure that must be understood above all others by the Subcommittee:

First, today's market structure is a Rube Goldberg of sorts. It is the product of a gradual, 15-year evolution, during which government repeatedly acted in big ways and market forces repeatedly reacted accordingly. Each time the industry changed its behavior in response to a new regulatory, legislative or judicial mandate, practices and structures sprung up that upended decades, even centuries of established practice. And these consequences, some of them unintended, triggered the government to revert with yet another round of fresh rules addressing the new order. The result? Today's profoundly complex, patchwork market structure is certainly not what one would design if starting with a blank slate.

But despite its complexity and the largely *ad hoc* way in which it was created, modern market structure generally results in better outcomes, for both retail and institutional investors, than what it replaced. This is the second major point we believe the Subcommittee must understand above all others. With apologies to

Sir Winston Churchill, what we have today is the worst market structure possible — except for all the others that have been tried.

Importantly, this does not mean that things are perfect. Indeed, there are a few critical, problematic gaps in today's structure that merit exploration by regulators and legislators for potential fixes. Among these are the rules regarding off-exchange trading, safeguards against systemic risk and the quality of markets for shares of smaller companies.

Now I'd like to elaborate a bit on the first point — that today's market structure is the product of a 15-year cycle of government action and market reaction. This began in 1997, with the imposition of new "order-handling" rules following the price-fixing settlement between the Justice Department and the Nasdaq dealers I mentioned earlier. Dealers were required to display to the market customer limit orders that were priced better than their own, proprietary quotes. Rather than narrow their own quotes on the Nasdaq system, the firms did this mostly by shipping these orders to electronic limit-order books known as ECNs. The ECNs soon multiplied, dreamed up new and creative ways of attracting orders from other market participants and by the end of 1999 had captured one-third of the volume in Nasdaq-listed stocks.

In that same year, 1999, the SEC responded to the new (and mostly unexpected) popularity of ECNs by passing Regulation ATS. This new rule allowed ECNs and other alternative execution venues to operate under a lighter set of regulatory requirements than those applied to exchanges. One of these ECNs, Island, developed a new way to lure customers into posting limit orders on its book — pay them a rebate every time another customer accessed one of those quotes. This was the beginning of the so-called maker-taker system under which most stocks in the US and, increasingly, other parts of the world, trade. Also in 1999, GETCO and Tradebot, two of what are today the world's biggest automated market-making firms — often referred to as high-frequency traders — were founded. Firms such as these often gravitated to the new ATSs, which generally were more innovative, tech-savvy and responsive to customer needs than the incumbent exchanges.

Traditional dealers were marginalized by these new rules and the market's reaction to them. The final nail in their collective coffin came two years later, in 2001, when the markets finally implemented Congress' mandate to move from quoting prices in fractions of a dollar to using decimal pricing. With the minimum price variation now just one penny, down from 12.5 cents¹ (1/8 of a dollar) in the old order, and new types of firms able to compete with traditional dealers by quoting narrower markets, the "spread" between the best bid and best offer prices available for investors to access shrunk dramatically. Traditional dealers could no longer earn suitable profits from these spreads, and changed their business models as a result. By 2003 firms

¹ Technically speaking the minimum increment had narrowed to 1/16 of a dollar starting in 1997, when Bernard L. Madoff Investment Securities began making markets in 1/16 increments. Regional exchanges, Nasdaq and the NYSE later followed.

such as Goldman Sachs, Morgan Stanley, Merrill Lynch and Credit Suisse First Boston were abandoning principal trading in favor of charging agency commissions for Nasdaq-listed stocks. They laid off hundreds of equity trading floor personnel and replaced them with computerized algorithms, which chopped big institutional trades into small pieces to be executed over time.

At the same time, HFT firms such as GETCO and Tradebot were beginning to fill the market-making niche left vacant by the Nasdaq dealers. With the minimum tick just one penny, instead of a *de facto* 25 cents in the pre-Justice Department days, these new market makers earned far less per share than did their predecessors. As a result, they had to trade more frequently to amass sufficient profits. The average trade size in the market came down, and trading volumes began to rise. By 2005-2006, HFT and HFT-related firms like Wedbush Morgan², Citadel and Automated Trading Desk became firmly entrenched in the ranks of the top liquidity providers for Nasdaq-listed stocks.³

Institutional investors, who had become accustomed to an average trade size of 2,000 shares or more in the old era, and plentiful block liquidity for even larger trades, were confronted with a completely new market structure and needed to interact with this new type of liquidity using different tools and tactics. Institutions began using the algorithms offered by the big investment banks that had once committed capital *en masse* to facilitate asset-manager orders. This only made the ground more fertile for the automated HFT firms that today account for at least half of US equity volume.

Then, starting in 2007, the SEC began implementing a sweeping set of equity-market-structure reforms known as Regulation NMS. These were designed to better knit together markets that had become increasingly fragmented as a result of the limit-order-display rule and Reg ATS, and to bring to NYSE-listed trading the more-automated style and structure that grew to dominate the Nasdaq market in the years following the Justice Department settlement. The most important element of Reg NMS was the dictum that manual, or “slow,” markets would not enjoy protection against traders executing orders on other exchanges or ATSs at inferior prices. This effectively forced the NYSE to move from a manual to an auto-ex structure, making it possible for the first time for institutions and HFTs using algorithms to trade NYSE-listed shares on the same electronic exchanges and ATSs that they’d been turning to for several years already in the Nasdaq-listed world.

This is not a comprehensive account by any means — to provide that would require more of your time, and patience, than is available in this setting. But it is essentially how we got to where we are today. As you can see, the current market structure has been patched together over many years, with the industry reacting to significant government reforms in ways that often prompted further regulatory adjustments and further cycles of unintended consequences and even more new rules.

² Wedbush is a well-known clearing firm for large HFT firms.

³ Source: Nasdaq OMX Group – Top Nasdaq Liquidity Providers, November 2006

This action-and-reaction cycle has, oddly enough, taken us to a better place with respect to investor outcomes than where we were in the mid-1990s, before the transformation began. Both explicit costs — such as exchange fees and brokerage commissions — as well as implicit costs like bid-ask spreads, the price impact of big orders and the “slippage” from the “arrival” prices of institutional orders to the average prices at which they are actually executed — have come down dramatically during this period. Instead of just one anointed “specialist” per NYSE-listed stock, or a cartel of upstairs dealers keeping spreads artificially wide for Nasdaq-listed shares, dozens of liquidity providers compete to make the tightest possible markets in the most actively traded US equities.⁴ Investors who once paid 25 cents per share in spread alone when buying and selling large-cap, actively traded stocks like Intel and Microsoft now pay no more than a penny or two. Exchanges that once extracted monopoly or duopoly rents from trading customers now compete vigorously to offer the most attractive fees and rule sets for various client segments, allowing those firms to charge lower commissions to their customers. Executions are largely instantaneous, and algorithms can be programmed to mask an asset manager’s intent, limiting market impact and other implicit costs.

To be sure, today’s is a much more complex market structure, with no shortage of conflicts of interest between intermediaries and end investors, which requires more effort on the part of institutional investors to understand.⁵ But those who invest the time and relatively small amounts of money necessary to gain such understanding reap much bigger benefits from greater efficiency and lower transaction costs.

But there are a few corners of the market that either have not shared in the benefits of this transformation or have largely failed to transform in ways that would result in the best possible outcomes for investors.

One such cause for concern is the explosion in off-exchange trading in recent years. According to our analysis of public data, 16.4% of US equity volume was executed away from markets that display price quotes⁶ in January 2008. By January 2012 non-displayed trading had more than doubled, to an all-time high of 34.2%. In May, 31.2% of US equity trades were executed off-board.

According to non-public data we collect directly from various brokers and ATSs, about 14-15 percentage points of this off-exchange trading is done in so-called dark pools — automated platforms, most of them registered ATSs, that match customer

⁴ Additionally, the advantages that such market makers can obtain, such as low-latency internal trading systems or co-location with exchange matching engines, are available to all market participants who wish to invest in such technology, whereas the advantages that accrued to specialists and dealers were typically awarded only to them and not available to others.

⁵ At the root of most of these conflicts is the incentive for brokers to route orders to venues that pay them rebates or charge the lowest possible fees, rather than to the venues that will provide the best execution. However, we believe that enforcement of current best-execution rules, rather than additional regulations or reforms, would best address this problem.

⁶ These figures include all transactions executed away from registered exchanges, excluding major ECNs, such as those operated by BATS Global Markets and Direct Edge, which operated exchange-like limit-order books.

buy and sell orders without displaying price quotes. Based on our understanding of how these platforms work, we believe that the majority of trades executed in dark pools receive *significantly better* outcomes than would be readily available on exchanges. Most of the volume is executed at the midpoint of the National Best Bid/Offer spread, meaning that both customers are receiving significant price improvement. And at least a small portion of dark-pool executions also delivers substantially larger size than is available on exchanges.

But a significant fraction of off-exchange trades do not result in materially better outcomes than would be readily available on exchanges. A minority of trades in the aforementioned dark pools simply matches the NBBO or offers *de minimis* improvement over the best prices quoted on exchanges. Additionally, we estimate that approximately 10 percentage points of the off-exchange market share is retail orders that are executed as principal by wholesale market makers. In the vast majority of cases, these wholesalers either match the NBBO or offer *de minimis* price improvement — about 10% of the spread. Typically the wholesalers also offer cash payments to the retail brokers of roughly 10-15 cents per 100 shares. The end customer benefits from any price improvement, if offered, but does not see any of the payment for order flow, which is kept by the retail broker. In a few cases, big, brand-name online brokers serving retail customers have contracted to execute either 100% or substantial portions of marketable customer order flow with certain wholesalers. Regardless of whether such contractual arrangements are in place, the vast majority of liquidity-seeking retail orders⁷ in the United States never interact with the bulk of the country's available trading interest in the exchange environment.

This is important because our trading markets exist to support primary markets — to ensure that companies can raise capital, and that the prices of the securities they sell to raise capital are as accurate as possible. This, in turn, enables the efficient allocation of capital in the US economy. And it is axiomatic that the more trading interest interacts in a centralized market — or at least a market that is virtually centralized using technology — the more accurate prices will be.

However, our modern market structure encourages full-throated competition among market centers, but not among all individual orders. Retail orders that are hived off from the rest of the markets and executed by a handful of wholesalers — again, approximately 10% of total US equity volume — are not doing worse, *per se*, than they would if they were sent to exchanges. In many cases they are doing better, owing to the *de minimis* price improvement I mentioned earlier. And they are certainly receiving better outcomes than they did in the pre-1996 era, when spreads were much wider. But they are largely divorced from the price-discovery process. And it's possible that they not only could receive better outcomes on exchanges, where midpoint liquidity is often resident in the form of so-called hidden order types, but that prices would be more accurate and capital allocation more efficient if

⁷ Market orders and marketable limit orders

exchanges were permitted to compete with wholesalers for this order flow on a level playing field.

Current prohibitions on sub-penny quoting by exchanges, as well as rules that permit *de minimis* price improvement and no size improvement for internalized trades, mean that the field of play is currently tilted away from exchanges and toward brokers. This results in attempts by exchange groups to come up with new, creative order types and rules in efforts to compete with the off-exchange market, such as the NYSE's proposed Retail Liquidity Program, which would add yet another layer of complexity to the Rube Goldberg contraption.

Historically, certain brokers have argued that internalization without significant price or size improvement is necessary to counter the immense market power of exchanges, which once boasted near-monopoly market shares as well as in-house regulatory arms that wielded considerable influence over member firms. Today, however, there are 13 exchanges scratching and clawing for market share, with potentially more on the way. And no one exchange enjoys anything close to a majority of the market share in either consolidated volume or, in the case of listing markets, the activity in their own listed companies. Exchanges can, and would, adopt pricing and rule structures that would be economically attractive to retail brokers and their customers — without lopping this important segment off from the wider market, and without the threat that brokers would face insufficient competitive options for their customer orders. Exchanges also have ceded most of their member-firm regulatory activities to the Financial Industry Regulatory Association, or FINRA. So their ability to use regulatory authority as a competitive weapon is significantly diminished in today's market structure.

The Canadian government recently took action to prohibit off-exchange trading without *significant* price or size improvement, with significant price improvement defined as at least one tick — or the bid-ask midpoint if the spread is one penny. Regulators in Australia may also be moving toward such a regime, and authorities in Europe are considering similar rules as part of a revamp of legislation that opened its markets to greater competition five years ago. The SEC in early 2010 floated the idea of a "trade-at" rule, which would prohibit internalization without significant size or price improvement. We believe the US should consider seriously this and other mechanisms that would maximize the interaction of orders in the secondary markets, with the goal of optimizing price discovery and efficient capital allocation.

Another area that merits continued regulatory scrutiny is the reality that today's automated, fragmented markets, although they deliver better outcomes for investors under normal circumstances, do not perform as well under stress as the more manual, consolidated markets that preceded them.

The most glaring and obvious manifestation of this, of course, occurred on May 6, 2010. In what has become known as the flash crash, major equity indexes lost and then recovered approximately 9% of their value in the space of just a few minutes. One big reason why some stocks traded that day at absurd prices — as low as one

cent for some large-cap issues — is that brokers under Regulation NMS are allowed to bypass so-called slow markets. The NYSE's mechanisms for slowing down trading in times of stress to ensure accurate price discovery — the so-called Liquidity Replenishment Points — were activated in many of the affected stocks during the flash crash. But rather than wait for the LRPs, which depend on human intervention, to run their course and stabilize the stocks, many brokers simply routed around the NYSE, to fully automated exchanges whose order books were overwhelmed by rapid-fire selling.

The lack of coordinated mechanisms to slow down trading and allow for human intervention during times of stress was an unforeseen hole in the market structure that evolved in piecemeal fashion since the late 1990s. The SEC and the exchanges have attempted to patch that hole, first with coordinated circuit breakers on individual securities and more recently with a so-called limit-up/limit-down system. The latter mechanism essentially prevents securities from trading at prices that are outside of pre-determined bands, based on movements away from the previous day's closing price. Such a system may prevent flash-crash-like dislocations that result from technological glitches or mistakes. But we worry that they may also inhibit price discovery for stocks that are affected by significant news — including earnings and other corporate events — that legitimately affects their prices. Of greatest concern is that traders who want to act upon such news will not wait when a stock is "limit-up" or "limit-down" in the US markets and simply go elsewhere to effect their transactions.

Finally, of particular interest to this subcommittee is the quality of markets for small companies. We and other market participants have observed a divide in outcomes for large-capitalization, actively traded stocks and smaller issues. Small-company shares may not be experiencing the efficiency and cost benefits that have accrued to bigger, more liquid stocks as a result of the 15-year market-structure transformation I've discussed here. A 2009 NYSE study of bid-ask spreads, for example, showed that at higher volatility levels, spreads for smaller stocks widened in the years following Reg NMS while spreads for the top 200 issues by market capitalization narrowed significantly.

This alone is certainly not proof positive that market structure is harming market quality for small caps. Surely the dramatic spike in volatility that accompanied the height of the financial crisis in 2008 and 2009 contributed to spreads widening. But it is consistent with much anecdotal evidence. As brokers, we hear from our institutional clients quite often that small and midcap stocks have never been more difficult to trade. And this also squares with what we know about the new generation of HFT liquidity providers, who largely concentrate on shares that already have a critical mass of volume and liquidity, because they need to trade in very large quantities to make their tiny per-share profits add up to something substantial. In short, it appears to us that the change from wide spreads and little competition among market makers to ultra-thin profit margins and intense

competition has removed many of the incentives that used to exist for firms to systematically provide liquidity in small-cap names.

For these reasons, we support experimentation by regulators and legislators to provide new incentives for making markets in the shares of smaller companies. The provision of the recently adopted JOBS Act requiring the SEC to study whether wider minimum price increments would improve market quality for emerging-growth companies is one example of measures that could address this issue.

The subcommittee is also considering the notion of allowing issuers to pay market makers. Although we don't know what form such programs would take, we have reservations about this idea, whether these payments are made directly or funneled through exchanges.

As I mentioned earlier, exchanges and market makers already offer payments to brokers in exchange for order flow. These rebates are part of an often-Byzantine set of fee schedules and rules that create significant conflicts of interest between investors and the brokers who execute their orders. Brokers have a strong incentive to route orders to the venues that will pay them the best rebates, thereby padding their profit margins, rather than to the venues that would provide the best possible executions for customers. These payments for order flow can also provide benefits, such as allowing market makers to quote tighter markets. And it would be difficult to eliminate them after having encouraged fragmentation and competition among trading venues, because fee schedules are one of the biggest competitive differentiators in the exchange business. But they surely are one aspect of our market structure that one would not build in if designing the system today from scratch.

We fear that introducing another set of economic inducements would create more conflicts that could harm investors. It is commonly known within some circles in the trading community that listed companies sometimes have pressed market makers to "support" their stocks. One well-documented case of such behavior involved the former CEO of American International Group, Hank Greenberg, who reportedly had badgered former NYSE CEO Dick Grasso and the specialist in AIG constantly for better pricing of the company's shares.⁸

Exchanges derive substantial revenues from company listings, and don't want to lose them to competitors. That's a tough enough conflict for exchanges and investors to navigate. Issuers who pay market makers, directly or indirectly, may be even more emboldened to push those market makers to artificially prop up their share prices in the face of any number of legitimate market forces — such as unflattering news or short selling — or, simply, if management believes the market is not recognizing the company's true value.

⁸ This episode is laid out in great detail in "King of the Club," the 2008 biography of Grasso by former *Wall Street Journal* reporter Charles Gasparino

In closing, I'd like to reiterate that modern US equity market structure is the creation of 15 years of back-and-forth between government regulation and market reaction to that regulation. It is far from perfect, and there are several aspects of it that merit further investigation and potential reforms. But it serves the investing public better than what preceded it. As a result, fundamental reforms, like the ones that triggered the great market-structure transformation back in 1997, should be considered only with the greatest of care.

Thank you once again for the opportunity to share the views of Rosenblatt Securities. I will be happy to answer your questions.



Testimony of
Mr. Thomas M. Joyce
Chairman and Chief Executive Officer
Knight Capital Group, Inc.

Submitted before the
The Committee on Financial Services
Subcommittee on Capital Markets and Government Sponsored Enterprises
United States House of Representatives

Hearing on:
Market Structure: Ensuring Orderly, Efficient, Innovative and
Competitive Markets for Issuers and Investors
Wednesday, June 20, 2012

Chairman Garrett, Ranking Member Waters, and Members of the Subcommittee thank you for the opportunity to submit written testimony in connection with this very important hearing regarding key market structure issues.

1. Brief history of Knight

Knight Capital Group, Inc. (Knight) opened for business in 1995.¹ Built on the idea that the self-directed retail investor would desire a better, faster and more reliable way to access the market, Knight began offering execution services to discount brokers. Today, Knight services some of the world's largest institutions and financial services firms, providing superior trade executions in a cost effective way for a wide spectrum of clients in multiple asset classes, including: equities (domestic and foreign securities), fixed income securities, derivatives, and currencies. Today, Knight through its affiliates, makes markets in equity securities listed on the

¹ Knight Capital Group, Inc., through its subsidiaries, is a major liquidity center for foreign and domestic equities, options, futures, fixed income securities, and currencies. On active days, Knight can execute in excess of 10 million trades, with volume exceeding 20 billion shares. With offices in the U.S., Europe and Asia, Knight's clients include more than 5,000 broker-dealers and institutional clients. Currently, Knight employs more than 1,500 people worldwide. For more information, please visit: www.knight.com.

New York Stock Exchange (NYSE), Nasdaq, NYSE Amex, the OTC Bulletin Board, and OTC Markets. Knight typically executes approximately 4 million trades per day. In 2011, Knight:

- Made markets in (or traded) approximately 19,000 securities.
- Executed more than one trillion shares (approximately 4 billion per day) in U.S. equities.
- Executed more than 900 million equity trades (approximately 4 million per day).
- Traded more than \$6.4 trillion in notional value (over \$24 billion per day).

The majority of the trades we execute today are on behalf of retail investors. Although retail customers do not come to us directly, their brokers do. We count amongst our clients some of the largest retail brokerage firms in the U.S., including: Scottrade, TD Ameritrade, Fidelity, Raymond James, E*Trade, Pershing, Vanguard and Wells Fargo. In addition, we service some of the largest institutions in the country. These institutional clients send us orders on behalf of mutual funds and pension plans, whose ultimate clients are, of course, small investors.

Knight has spent the last 17 years evolving our technology infrastructure so that it can process millions of trades a day on behalf of the retail investor – in a fast, reliable, cost effective manner, while providing superior execution quality and service. Our data centers are some of the largest and most reliable in the industry. We spend tens of millions of dollars every year making our technology platform better, faster and more reliable. Today, we have the capacity to process 20 million trades per day. We have connectivity to nearly every source of liquidity in the equities market, and our trade response times are measured in milliseconds. Our years of research and development, technology platform enhancements, and connectivity to liquidity wherever it resides is all brought to bear in our endeavor to secure best execution on behalf of our customers (and, in turn, their customer – the retail investor). Importantly, access to this sophisticated gateway is available to nearly every investor in the country.

As a result, we believe that Knight is uniquely qualified to comment on the market structure issues which are the focus of this hearing – “...to examine equity market quality,

innovation, competition and the impact that market structure has on smaller issuers.” At their core, these issues revolve around notions of execution quality, liquidity, fair access and responsible rulemaking through rigorous cost-benefit analysis – all of which form the foundation for our capital markets. As we have noted previously, and as you will undoubtedly see upon the careful analysis of all of the relevant data, the U.S. equity market is the best functioning and fairest market globally. This has been achieved through fact-based decisions, prudent rulemaking, structural transparency and timely and efficient disclosure, all of which are products of a competitive and fair market structure that allows choice and fosters innovation.

2. There has never been a better time to be an investor

There has never been a better time to be an investor (large or small) in U.S. equities. Execution quality (speed, price, and liquidity) are at historically high levels, while transaction costs (explicit and implicit) are at historically low levels.

Virtually every dimension of U.S. equity market quality is now better than ever. Execution speeds have fallen, which greatly facilitates monitoring execution quality by retail investors. Retail commissions have fallen substantially and continue to fall. Bid-ask spreads have fallen substantially and remain low, although they spiked upward during the financial crisis as volatility increased. Market depth has marched steadily upward. Studies of institutional transactions costs continue to find U.S. costs among the lowest in the world.

Equity Trading in the 21st Century. James J. Angel, Lawrence E. Harris, and Chester S. Spatt (February 23, 2010).

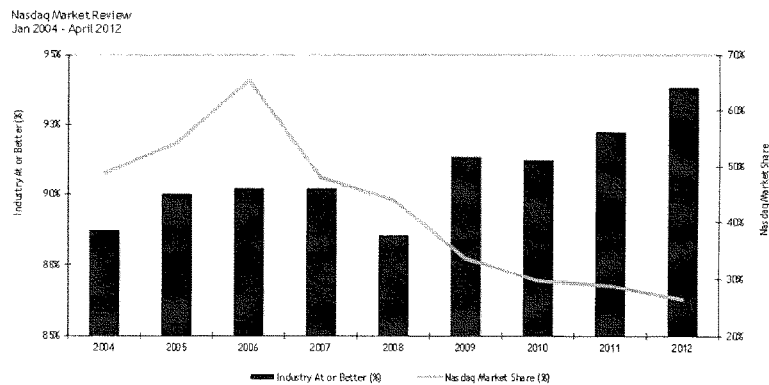
The U.S. equity markets are the fairest, most transparent and most liquid markets in the entire world. Remember that during the course of the last few years, with the exception of two notable exceptions, the equity markets worked flawlessly. As will be discussed in more detail below, the two exceptions were May 6, 2010 – the so called, “flash crash” and, more recently,

Nasdaq's handling of the initial public offering (IPO) of Facebook Inc. on May 18, 2012. The SEC has taken a number of measured and reasonable steps to address the issues associated with the flash crash. Currently, Nasdaq is preparing a rule filing to address the damages sustained by market participants and investors as a result of its technology and operational failures in connection with the Facebook IPO. The industry anxiously awaits the outcome, and hopes that the remedial measures taken by Nasdaq will fully address the entire scope of damages sustained by market participants. Aside from these two unfortunate days, the equities markets have performed extremely well. One may not have liked the direction prices went at times but all investors could act on their investment decisions swiftly and with surety -- distinguishing themselves in their reliability and robustness.

An extraordinarily important fact, however, continues to be overlooked -- investors have seen *substantial* improvements in execution quality over the last 5-7 years.

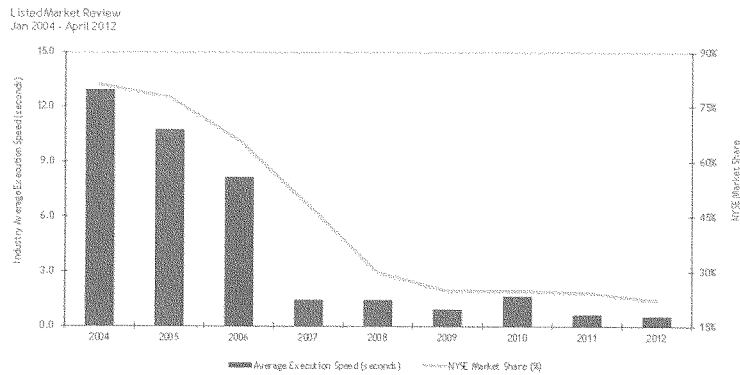
For example:

a. The amount of times investors receive a price better than the national best bid or offer (NBBO) has risen significantly over the years.



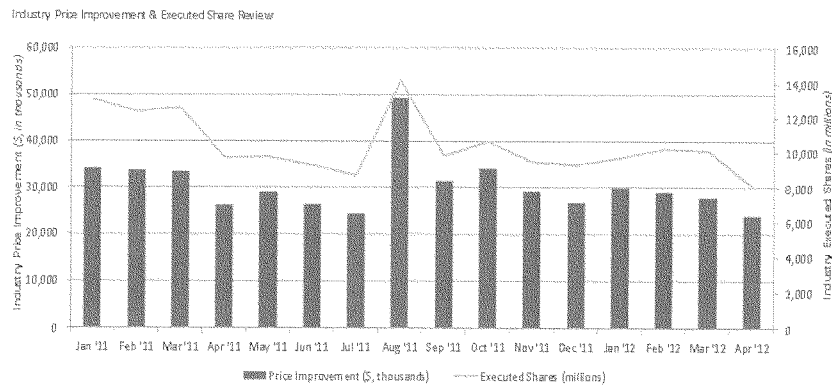
Calculations are for held market orders of order sizes 100-1999 shares. Data Source: Thomson Transaction Analytics.

b. Today, the industry average execution speed for retail market orders is less than one second. In 2004, it took more than nearly 12 seconds to execute that same order.



Calculations are for held market orders of order sizes 100-1999 shares. Data Source: Thomson Transaction Analytics.

c. Market makers frequently execute trades at prices better than the NBBO. In 2010, more than \$200 million in price improvement was provided to investors by market makers. In 2011, more than \$300 million in price improvement was provided. This money ends up directly in the pockets of investors, and flows back into the economy.



Data Source: Thomson Transaction Analytics

The facts show that investors have benefited greatly over the years as a direct result of the developments in market technologies. In fact, in speaking before the STA's Annual Meeting on October 4, 2007 after the adoption of Regulation NMS, former SEC Commissioner Annette L. Nazareth stated that,

Today, the landscape has changed dramatically. In August of this year [2007], for example, NYSE's market share in NYSE-listed equities was approximately 45.8%. For the first time, ATSS and ECNs are now competing head-on with the listed markets...What a difference true competition makes! (emphasis supplied)

High speed computers, dark pools, etc. are not the problem; indeed, they are the culmination of our free-market system – competition. Competition has led to better executions (both speed and price) for investors. We should not look to impede competition; rather we should always look for ways to enhance it. That is what keeps the U.S. capital markets great. Former SEC Chairman Arthur Levitt got it right when he said,

Investors large and small have always been served well by those looking to build the deepest possible pool of potential buyers and sellers, maker trades at a better price, and all as quickly as possible...More liquidity, better pricing and faster speeds are the building blocks of healthy, transparent markets, and we must always affirm those goals.

Wall Street Journal -- August 17, 2009.

3. Trading Technologies

Retail investors are able to harness the connectively and lightning-fast technology made available to them by their brokers and the execution venues that handle their order flow. From a speed and access point of view, investors are able to access some of the best trading technology available today – at little or no cost.

Market venues spend hundreds of millions of dollars every year on technology, including data centers, communication lines and infrastructure. They look for new and improved ways to

source and access liquidity, in the most effective and efficient manner (including, dark pools, co-location, and countless order types). The investor community is provided access to many of these tools and technologies without charge (other than, of course, the small commission they pay their broker). That's right -- investors get access to nearly all liquidity pools and they can harness some of the fastest and most sophisticated technologies in the world. For example, as noted above, Knight is connected to all key liquidity pools. We deploy some of the fastest, most sophisticated trading technology in the world, all of which is brought to bear for the purpose of executing our clients' orders. Simply put, if a retail investor gives a market order to buy 500 shares of Starbucks to his broker and that broker routes the order to Knight (or, many other execution venues), that order will likely be executed at the NBBO, or better, in a fraction of a second. The cost to the investor is simply the commission paid to their broker (typically, less than \$10). Knight, as well as most other non-exchange execution venues, provides access to all of its technology, liquidity, and gateway to the marketplace at no charge to the retail investor.

These different forms of market structure are needed for different participants. The retail investor truly benefits from this vigorous competition and resulting choices provided. These market processes are designed to facilitate the sourcing of liquidity and enhancing execution quality. Remember, the retail investor is not operating alone. Retail investors place their orders with sophisticated executing brokers who have access to the various liquidity pools in the market. Additionally, brokers often turn to executing venues (like, Knight and others) to gain further access to the markets. Taken together (the broker and the execution venue), these robust resources are brought to bear for the benefit of retail investors -- providing them with a vibrant gateway into the marketplace and unprecedented access and liquidity.

4. Competition and Innovation

We fully support this Subcommittee's initiative to review the broad range of market developments which have helped shape our equity markets in recent years. Competition and innovation have led to advancements in trading technologies over the last several years. In fact, Regulation NMS helped pave the way for competition to thrive among market participants. In addressing the STA at its Annual Meeting on October 13, 2006, SEC Commissioner Nazareth stated,

Two of the Commission's primary goals for Reg NMS are to promote vigorous competition among markets and to remove any competitive advantages that the old rules may have given manual markets. All evidence to date indicates that these goals are well on their way to being met.

Those advancements have resulted in more liquidity, more price improvement and faster executions. Investors of all shapes and sizes (from small retail investors to large institutions) are reaping the fruits of those endeavors. As former SEC Commissioner Kathleen L. Casey noted on October 21, 2009,

Competition has transformed the equity markets. We have moved light years from the slow manual trading that once characterized the New York Stock Exchange. We have moved well beyond the NYSE/Nasdaq duopoly. Today, the U.S. equity markets offer more benefits to more investors than at anytime in history. Over the past decade, advances in technology, coupled with paradigm-shifting regulatory actions such as Regulation ATS, have lowered barriers to entry. The resulting vigorous competition for customer order flow among numerous trading venues — including so-called “dark pools” — has led to more choices of trading centers, greater speed and liquidity, financial innovation, tighter spreads, and lower execution costs. Investors, particularly individual investors, have reaped the benefits of the fierce competition that has developed in this area. Therefore, it is imperative that we not take any regulatory actions that would impede or unintentionally reverse this considerable progress.

5. Sensible rule-making

Regulatory fine tuning is necessary in a market as dynamic as U.S. equities. Given the many market structure changes that have taken place in recent years, a holistic examination of the U.S. equity market structure is timely, relevant and necessary. We believe it is especially important to craft effective trading rules. As the renowned statistician W. Edwards Deming once said, “In God We Trust; all others must bring data.” The best rulemaking is based on a careful analysis of all relevant facts. We urge the SEC to look closely at the statistical evidence of how efficiently the equities markets currently operate; to assess how much value the current system brings to all investors; and, to insure that any rulemaking withstands a rigorous cost-benefit analysis.

Knight has advocated repeatedly that competition, rather than mandated and prescribed paths to trading, benefits market participants and all investors. For example, the SEC’s Rule 605 is an excellent example of regulation that increases competition by promoting transparency and comparability. The rule requires market participants to post their execution statistics in accordance with standardized reporting metrics, thus enabling order routing firms to make more informed routing decisions to meet their clients’ needs. This has increased competition and pressured market participants to continuously strive to improve their execution capabilities for customer orders, while resulting in dramatically reduced costs for investors. We believe the dramatic decrease in brokerage commissions and the split-second executions for most marketable orders in recent years is a direct result of these competitive forces; it was not driven by regulatory fiat. Additionally, SEC Rule 606 requires brokers to disclose on a quarterly basis the venues to which it routed order flow, as well as any payment for order flow arrangement. The adopting release to Rule 606 states, in part:

The purpose of requiring disclosure concerning the relationships between a broker-dealer and the venues to which it routes orders is to alert customers to potential conflicts of interest that may influence the broker-dealer's order-routing

practices. Currently, Rule 10b-10(a)(2)(i)(C) requires a broker-dealer, when acting as agent for the customer, to disclose on the confirmation of a transaction whether payment for order flow was received and that the source and nature of the compensation for the transaction will be furnished on written request. In addition, Exchange Act Rule 11Ac1-3(a) requires broker-dealers to disclose in new and annual account statements its policies on the receipt of payment for order flow and its policies for routing orders that are subject to payment for order flow. The Commission believes that disclosure of potential conflicts of interest in conjunction with a quantitative description of where all non-directed orders are routed may provide customers with a clearer understanding of a broker-dealer's order routing practices than is provided under current rules. (emphasis supplied)

Regardless of any payments received, the SEC and self-regulatory organizations (SROs), like FINRA and the NYSE, have made it very clear, that the broker's first obligation is to seek best execution.

The SEC has stated:

The Commission anticipates that improved disclosure of order routing practices will result in better-informed investors, will provide broker-dealers with more incentives to obtain superior executions for their customer orders, and will thereby increase competition between market centers to provide superior executions. Currently, the decision about where to route a customer order is frequently made by the broker-dealer, and broker-dealers may make that decision, at least in part, on the basis of factors that are unknown to their customers. The Rule's disclosure requirements will provide investors with a clearer picture of the overall routing practices of different broker-dealers. The Commission contemplates that this will lead to greater investor involvement in order routing decisions and, ultimately, will result in improved execution practices. Because of the disclosure requirements, broker-dealers may be more inclined (or investors may direct their broker-dealers) to route orders to market centers providing superior executions. Broker-dealers who fail to do so may lose customers to other broker-dealers who will do so. In addition, the improved visibility could shift order flow to those market centers that consistently generate the best prices for investors. This increased investor knowledge and involvement could ultimately have the effect of increasing competition between market centers to provide superior execution. (emphasis supplied)

See, SEC Release No. 34-43590 (November 17, 2000).

This is precisely the type of transparency which has led to fierce competition among market centers. That healthy competition has resulted in the extraordinary levels of execution quality retail investors enjoy today. In addition, many of the measures taken subsequent to the

flash crash, also demonstrate the careful, measured approach the SEC has taken when adopting new marketplace regulations addressing systemic risk while not trying to micro-manage the markets. Those measures included: stock-by-stock circuit breakers, clarifying the erroneous trade rules, sponsored access rules, and the recently adopted limit-up/limit-down rules.

Trade At

We urge the SEC and other regulators to never lose sight of the importance of cost-benefit analysis. For example, various iterations of the “trade at” rule continue to be proposed by certain market participants. For the last 25 years, the SEC has consistently rejected these proposals, noting that a competitive, choice-driven market is far better for investors. Internalization is one such benefit for investors. Internalization offers retail and institutional investors a cheap, fast and safe method for executing their orders. Internalization exists because of client demand for best execution. It is an execution choice that enables investors to get the best possible price (often better than what is displayed in the market), along with low transaction costs and minimal information leakage. As noted previously, one of the many quantifiable benefits of internalization include price improvement which is money directly back into the pockets of investors. That is, investors can receive prices that are better than what are displayed in the market. Internalization is available for all investor types and access has been significantly democratized by the extremely networked lattice structure of venues. To move away from this networked venue system, with its lit and dark venues that offer more execution flexibility would be a step backward. From the point of view of smaller market participants, such as retail investors, the market has never been so inclusive and efficient. The readily available access to numerous venues has allowed small investors to reap the benefits of internalization via price improvement, enhanced liquidity, and improved spreads. Furthermore, we have seen no

quantitative and qualitative justification offered for taking steps to change or slow internalization.

A “trade-at” regime, or moves to limit internalization, would add significant costs to retail and institutional orders: implicitly by minimizing competition and competitive innovation, explicitly by forcing many users of lower cost alternative venues to pay access fees. It would minimize the opportunities for price improvement (and eliminate sub-penny price improvement) to retail orders as they would always trade at the NBBO. It would reduce liquidity provided by market makers as increased costs would outweigh their liquidity provision ability in most cases. It would vastly increase quote message traffic and quote flickering as firms would be forced to be at the NBBO (likely at the lowest permissible quantity) to service their customers. It could place retail investors at a disadvantage to high frequency trading firms (HFTs). It would significantly diminish the ability of investors, including long-term investors, to use non-displayed trading venues (which typically do not place orders into the displayed markets) to handle their sensitive order flow. The requirement that such a venue either offer price improvement at least in the amount of the minimum increment in order to execute at the NBBO would be difficult given that many stocks trade in penny increments. Consider the following example:

Assume the market in ABCD:	
<u>Bid</u>	<u>Offer</u>
10.00 (100 sh.)	10.01 (100)
9.99 (100)	10.03 (100)
9.98 (100)	10.05 (200)
9.96 (100)	10.06 (100)

- An investor wants to buy 400 shares.
- If the market maker internalizes that order, it could provide up to 400 shares at \$10.01 (and many times it will price improve to \$10.009).
- In a “trade at” regime, the same order would be routed into the market. The order could be executed at an average of \$10.035, and an access fee of up to \$0.003/share could be charged.
- In this example, under a “trade at” rule, the investor could pay 2.9¢ more per share (or an extra \$11.60) on the exact same order. [$\$10.035 + \$0.003 = \$10.038 - \$10.009 = \$0.029$].
- Consequently, investors could pay hundreds of millions of dollars more each year for trades in a “trade at” regime

In short, “trade-at” would stifle innovation and set the U.S. equity market back more than a decade as many of the new business models that have been introduced would no longer exist. The detrimental consequences of such a radical move far outweigh any possible benefit.

NYSE Retail Liquidity Program

In October 2011, the NYSE submitted a rule proposal to the SEC in which it seeks to establish a liquidity program to attract retail order flow to the NYSE through the provision of price improvement from non-displayed sub-penny orders posted by professional Retail Liquidity Providers (“RLPs”) on the NYSE book. Although not yet filed with the SEC, it is our understanding that Nasdaq and possibly other exchanges are considering something similar. We have filed comment letters with the SEC in which we have urged the SEC to carefully study and analyze the sweeping implications of this proposed rule filing, especially the impact on Regulation NMS and the move to sub-penny quoting/ranking, prior to making a final decision on the rule. Rule 612 of Regulation NMS (i.e., the “sub-penny rule”) specifically prohibits:

“...market participants from displaying, ranking, or accepting quotations in NMS stocks that are priced in an increment of less than \$0.01, unless the price of the quotation is less than \$1.00.”

Regulation NMS Adopting Release, SEC Release No. 34-51808. (June 9, 2005).

As one of the more actively debated components of Regulation NMS, Rule 612 was the subject of numerous comment letters. Thus, material changes to this rule, like those contemplated by the NYSE proposal require careful consideration. The NYSE contends that the pilot period would reveal all potential problems and issues. The dispositive flaw in this argument is that the “pilot” will consist of securities traded on only one market venue. The NYSE fails to recognize that if approved, the proverbial slippery slope will be that many market participants will seek similar relief, thereby thrusting the U.S. equities markets into a sub-penny quoting/ranking environment without adequate study and analysis. A pilot program that allows only one venue to receive an

exemption from Regulation NMS is not a realistic test scenario and is unlikely to reveal any useful data.

Accordingly, in determining whether to approve or adopt new rules (e.g., trade at, RLP, etc.), we have urged the SEC to evaluate carefully all available empirical evidence, consider thoroughly the potential for unintended consequences, and insure that the benefits associated with any such proposal far exceed the costs.

6. The displayed markets are valid and robust

Some have argued that the value of the displayed markets is somehow eroded when trading occurs off an exchange. We disagree. We believe the displayed or “lit” markets are robust, execute the majority of trading volume in U.S. equities and, thus, the NBBO is a fair and accurate representation of the best prices available in the marketplace. As a result, trades executed off of an exchange predominately occur at the NBBO (or better) which is completely consistent with both the letter and spirit of Regulation NMS. Nevertheless, as noted, the majority of trading volume today continues to take place on an exchange. In fact, the lit markets (NYSE, Nasdaq, Direct Edge, BATS and the regional exchanges) account for approximately 70% of overall market volume. Regulation ATS and Regulation NMS helped to break the monopoly the exchanges had on market share. In fact, one of the “darkest pools” was the old specialist system on the floor of the NYSE. For years the specialists controlled trading information and access to data. Barriers to entry were lowered and competition was able to flourish, forcing the NYSE and Nasdaq to compete for market share, rather than simply demand it as a birth right. Former SEC Commissioner Casey properly noted:

This trading volume migration from the incumbent exchanges to other venues that publicly display trading interest demonstrates the robust competition among trading centers for customer order flow. It also

demonstrates that non-displayed liquidity has not materially reduced the quantity of publicly disseminated trade information. Therefore, it appears that an obsessive focus on the rise of dark ATSs is misplaced. Quoting venues in the aggregate are doing just fine, and the competition among them is a good thing, not something we need to “correct.”

SEC Open Meeting, Commissioner Kathleen L. Casey (October 21, 2009)

Market participants of all shapes and sizes actively trade both in displayed and undisplayed venues. If the prices in the displayed venues are not valid, trading firms quickly enter the displayed venues with orders and trades until the pricing is corrected. If this did not occur, those price dislocations would cause all venues (dark and lit) to be irrational. Thus, any suggestion that undisplayed venues do not contribute to price discovery is illogical. Market participants trade in both venues, insuring that pricing is rational and *bona fide*.

7. Suggested rule-making

Knight firmly believes that the U.S. equity markets are the fairest most efficient markets in the world. However, we recognize that ongoing, incremental regulatory changes are crucial to keep pace with a highly innovative equity market. We believe that the following rule changes are worthy of serious consideration and may help to restore investor confidence.

- a. Representative Patrick McHenry proposal.
- b. A consolidated audit trail.
- c. A review of access fees, including the elimination of the maker/taker model.
- d. Wider spreads for certain tiers of securities; e.g., high-priced stocks, less liquid stocks, etc.
- e. Market maker obligations, including a time in force for market maker quotations.

a. McHenry Proposal

Representative Patrick McHenry has drafted a legislative proposal, the “Liquidity Enhancement for Small Public Companies Act,” to ensure that adequate liquidity exists for smaller issuers. Knight fully supports this proposal. The bill seeks to promote the development

of market quality incentive programs by permitting issuers, exchanges, or any other company approved by the SEC or an exchange to provide financial incentives to market makers that adhere to standards of market quality established by an exchange. Nasdaq had proposed something similar on April 6, 2012 (SEC Release No. 34-66765). In its filing, Nasdaq seeks to:

... add new Rule 5950 (Market Quality Program) to enable market makers that voluntarily commit to and do in fact enhance the market quality (quoted spread and liquidity) of certain securities listed on the Exchange to qualify for a fee credit pursuant to the Exchange's Market Quality Program, and to exempt the Market Quality Program from Rule 2460 (Payment for Market Making).

As a leading market maker of U.S. equities, Knight supports initiatives designed to improve the liquidity and transparency of the equities markets. Market makers play a critical role in helping to insure the equities markets are vibrant and robust – this is particularly important in less active securities. We believe that the McHenry and Nasdaq proposals will benefit all market participants including, issuers, investors (institutional and retail), liquidity providers, and the overall U.S. economy by encouraging smaller companies to go public.

b. Consolidated Audit Trail (CAT)

Knight supports the SEC's stated goal of creating a more robust and effective cross-market order and execution tracking system. Knight believes that the U.S. markets today are well regulated and this is underscored by considerable volumes of data collected by regulators, such as OATS, ACT, OTS, COATS, Blue Sheets and other SRO audit trails. Knight supports market transparency and a thoughtful regulatory reporting structure that allows trading information to be made available to SROs and the SEC in a timely and consistent manner. In determining whether to adopt CAT, we have urged the SEC to evaluate and leverage all existing regulatory systems.

c. Access Fees

Access fees have been at the core of nearly every debate that has taken place around market structure for almost two decades – taking hold after the SEC Order Handling Rules were adopted in 1996 (SEC Release No. 34-37619A, footnote 272, September 6, 1996). The so-called “maker-taker” model is an exchange or trading platform pricing system that gives a transaction rebate to market makers providing liquidity (the makers); and charges a transaction fee to customers who take liquidity out of the market (the takers). Firms that “make” a trade post buy/sell orders and are paid a fee, typically between about 20 cents and 30 cents for every 100 shares traded. Firms that “take” those shares are charged a fee (the majority of retail investors are “takers” of liquidity). It was certainly not anticipated at that time, when spreads were multiples of what they are now, that this “communications charge” would become such a large component of the cost associated with a trade, or a profit center which had become the basis for routing and trading practices. As spreads have narrowed over the years, a \$0.003/share access fee has become a significant cost associated with the trade. Indeed, in a one penny spread environment, access fees have the effect of increasing the economic spread by 60% (assuming \$0.003 on each side of the quote). We therefore suggest that the SEC re-evaluate access fees in connection with its review of equity market structure, and consider eliminating the maker/taker model to insure we properly align market incentives with *bona fide* trading activities.

d. Wider spreads for certain securities

Knight fully supports the proposal to widen spreads for certain tiers of securities, including higher priced stocks, less liquid stocks, etc. In a one-penny spread environment it is very often difficult to aggregate meaningful volume at the one-penny increments for certain securities. As a result, it is difficult for investors to transact in these stocks, and makes it more challenging for smaller companies to go public.

In that regard, on April 5, 2012, the Jumpstart Our Business Startups Act (the “JOBS Act”) was signed into law. The stated goal of the JOBS Act is to promote job growth by easing the capital raising process for small and mid-sized companies. Many of the reforms included in this bill aim to reduce the regulatory burdens and cost of raising capital associated with previous public and private offering rules. Knight fully support the “tick-size” study offered by Representative David Schweikert that was included in Title I, Section 106(b) of the JOBS Act. Under this section, the SEC is directed to conduct a study examining:

- the transition to trading and quoting securities in one penny increments, also known as decimalization;
- the impact that decimalization has had on the number of initial public offerings since its implementation relative to the period before its implementation;
- the impact that this change has had on liquidity for small and middle capitalization company securities and whether there is sufficient economic incentive to support trading operations in these securities in penny increments.

We look forward to the SEC’s study and believe the results will indeed show that the securities of emerging growth companies should be quoted and traded using a minimum increment of greater than \$0.01 – for example, \$0.05.

e. Market Maker Obligations

Knight has previously proposed to the SEC that it consider adopting additional market maker obligations. Historically, market maker rules were designed to require market makers to maintain two-sided markets to ensure that investors can buy or sell a security any time and at a competitive price. In fact, during the recent Facebook IPO, many market making firms did just that. They processed hundreds of millions of shares of investor orders despite the technology issues experienced by Nasdaq. As a result of these extraordinary efforts to service investor needs during a highly dysfunctional IPO opening, media reports have estimated that market making firms lost more than \$450 million. As we have noted above, our sincere hope is that Nasdaq takes the necessary measures to address the full scope of the industry losses.

Over the years, as the market structure changed, market maker obligations have evolved into the current rule set. Although there have been some changes adopted post-May 6, 2010 (e.g., the elimination of stub-quotes), now is an opportune time to update rules and establish clarity around what qualifications and obligations market makers should be expected to meet in return for any benefits they receive.

While there are important specific elements that must be considered when adopting any new market maker rules, as a policy matter we support rules that would impose even stronger obligations on market makers. For example:

- Based on the price and average daily volume (ADV) of the stock, market makers should be required to quote “at the inside” at various tier levels (5-10% of the time during market hours), with minimum size requirements (200, 500, 1000 shares).
- Market makers should face higher capital requirements. Due to the risk associated with increased market maker obligations, capital requirements for market makers should be based on their quoting obligations in addition to the existing position based capital requirement.
- Market makers should be required to keep their quotes “live” for at least one second. In today’s world of hyper-speed trading, it is sometimes difficult to access quotations which appear in the market because they are cancelled in fractions of a second after being posted. Although many may view this recommendation as too aggressive, we firmly believe market maker quotes should not be permitted to be cancelled for a minimum of one second to enable other maker participants to access that quote. In our view, this will restore a good deal of credibility to the posted quotations in the market, and will eliminate a good deal of trading behavior which does not contribute meaningful liquidity to the market.

We believe these proposals represent meaningful reform that will make our markets better and more resilient, particularly in times of high volatility and price dislocation.

Conclusion

Knight appreciates the constructive roles this Committee and Subcommittee have played in the oversight of the markets and the rulemaking process. Your oversight helps to ensure that the U.S. capital markets remain competitive and innovative, thus benefiting all investors.

We also fully support this Subcommittee's and SEC's initiatives to review the broad range of market developments which have helped shape our equity markets in recent years. Competition and innovation, spurred by insightful rule changes fostered by the SEC, have resulted in dramatic improvements in market technologies and execution quality for the benefit of public investors – large and small. The U.S equity markets are the most liquid and efficient in the entire world, and have performed exceedingly well over the last decade. From an execution quality perspective, we believe that there has never been a better time to be an investor in U.S. equities. The advantages are considerable, including: speed and stability, price improvement, and a significant reduction in transaction costs. The empirical and statistical evidence available show tremendous investor benefits under the current trading and regulatory market structure.

We echo the comments of many of the members of Congress, the SEC Chairman and SEC Commissioners that these important issues must be driven by the careful analysis of empirical data, and not be driven by emotion or politics. Indeed, former SEC Commissioner Casey stated quite pointedly,

[I] think it is necessary for the Commission to first develop a deeper understanding of the whole range of U.S. equity market structure issues before we consider adopting these amendments. In my view, it is important that regulators act with humility. Sometimes we don't know what we don't know, and if we rush to regulate without a complete understanding of the extent to which complex and dynamic activities may be interrelated, the specter of unintended consequences looms large. The regulatory process for rethinking market structure, like short selling, needs to be driven by data, not politics or unfounded assumptions.

SEC Open Meeting, Commissioner Kathleen L. Casey (October 21, 2009)

We are confident that an independent SEC will be careful and thoughtful in its work - and not be swayed by any market participant's self-interest. We urge the Committee, Subcommittee, and the SEC to look closely at the statistical evidence of how efficiently the equities markets

currently operate; to assess how much value the current system brings to all investors; and to insure that any rulemaking withstands a rigorous cost-benefit analysis. Rules that are approved without statistical analysis, and simply under the auspices of a pilot, can have significant unanticipated consequences to the marketplace and investing public. In short, we must insure that any proposed new rules do not do more harm than good.

Thank you for your interest in these issues and for the opportunity to contribute to this important dialogue.



WRITTEN TESTIMONY OF DANIEL MATHISSON
on behalf of Credit Suisse

Before the House Financial Services Committee
Subcommittee on Capital Markets and Government Sponsored
Enterprises

"Market Structure: Ensuring Orderly, Efficient, Innovative and
Competitive Markets for Issuers and Investors"

June 20, 2012

Witness Background Statement

Dan Mathisson is the Head of U.S. Equity Trading for Credit Suisse. He is responsible for block trading, program trading, and electronic trading at Credit Suisse.

Mr. Mathisson joined Credit Suisse in 2000 as a trader, shortly after which he founded the Advanced Execution Services (AES) group, which grew to be the leading electronic trading franchise on the Street. Prior to joining Credit Suisse, he was the head equity trader at D.E. Shaw Securities.

Mr. Mathisson writes a regular column about trading and markets for Traders Magazine. In 2011 he was named one of the "Top Ten Innovators of the Decade" by Advanced Trading magazine, which cited him for creating the modern algorithmic trading desk. Mr. Mathisson received a B.A. in Economics from the University of Michigan, and he is a Chartered Financial Analyst.

Introduction

Good morning and thank you for giving me the opportunity to share my views on the best structure for our nation's stock markets. My name is Dan Mathisson, and I am the Head of U.S. Equity Trading for Credit Suisse¹.

The U.S. broker-dealer subsidiary of Credit Suisse Group has been operating continuously in the United States since 1932, when the First Boston Corporation was

¹ Credit Suisse provides its clients with private banking, investment banking and asset management services worldwide. Credit Suisse offers advisory services, comprehensive solutions and innovative products to companies, institutional clients and high-net-worth private clients globally, as well as retail clients in Switzerland. Credit Suisse is active in over 50 countries and employs approximately 48,700 people. Credit Suisse is comprised of a number of legal entities around the world and is headquartered in Zurich. The registered shares (CSGN) of Credit Suisse's parent company, Credit Suisse Group AG, are listed in Switzerland and, in the form of American Depositary Shares (CS), in New York. Further information about Credit Suisse can be found at www.credit-suisse.com.

founded. Today, Credit Suisse is the highest volume broker-dealer in the U.S.², and Credit Suisse owns and operates Crossfinder, which has been the largest Alternative Trading System (ATS) in the U.S. every month since May of 2009.³

I have been working in the U.S. equity markets for 20 years, the last 12 of which have been at Credit Suisse. I appreciate the chance to appear here today.

Summary

Credit Suisse believes that equity market quality has improved markedly over the past two decades, but there is still room for improvement. We suggest four policy changes, each of which is designed to make markets more reliable than they are today, or to reduce costs for investors.

Are the U.S. markets working effectively?

Credit Suisse believes that the market structure changes of the past 20 years have been successful in their goal of creating equity markets that are more fair, orderly, and efficient than in the prior era. The empirical evidence shows that Regulation ATS, decimalization, and Regulation NMS have led to an increase in liquidity and a decrease in the total number of market disruptions. We have found this holds true for both large and small issuers.

Credit Suisse recently completed a broad survey of market quality in the U.S. equity market, and found that in every empirical measure, the U.S. markets are functioning better than ever.⁴ The study found:

² Bloomberg RANK, Credit Suisse was #1 in volume in S&P500 stocks for full year 2011.

³ Rosenblatt Surveys, May 2009 – April 2012

Positives:

- *Overnight market volatility in 2012 is at a 15-year low.*
- *Intraday market volatility has been steadily decreasing since 2005.*
- *Bid-Ask spreads in the U.S. are the tightest in the developed world.*
- *Bid-Ask spreads have been clearly and steadily declining since Reg NMS was introduced, controlling for volatility.*
- *Average size of bids and offers has increased since 2004.*
- *The number of market disruptions, a.k.a. "mini flash crashes", has been decreasing since 2000.*

Negatives:

- *Quote flickering has increased, with the number of daily changes in the NBBO (National Best Bid Offer) per million shares traded at an all-time high in 2011.*

Overall the study failed to find any empirical evidence of negative market performance other than the increased cost of message traffic. However, two events over the previous 26 months do appear to have caused outflows from equity funds, signaling a loss in investor confidence. These two events were the "Flash Crash" of May 2010, and the chaotic Facebook IPO of May 2012.

Reduce the likelihood of another Flash Crash: eliminate market orders.

The Flash Crash revealed a serious flaw in our market structure – on May 6, 2010, there were no mechanisms in the market to stop panicked investors from selling

⁴ Ana Avramovic, "Who Let the Bots Out?" Credit Suisse Trading Strategy, May 2012. Also see "June 2012 Chartbook", Credit Suisse Trading Strategy.

stocks all the way down to zero. Credit Suisse believes that the new Limit Up / Limit Down rule and the new market-wide circuit breakers, recently passed by the SEC and scheduled to go live in February 2013, will be effective at preventing another flash crash, and we enthusiastically support these new rules.

In addition to these new rules, we recommend going a step further to prevent disruptions, by eliminating the market order. An order to sell "at the market" is inherently dangerous, being a limit order with a price of zero. A buy market order is even more frightening, being a buy order with a limit of infinity. The order type is based on faith that the other side will materialize at a reasonable price, which is unlike how people buy or sell almost everything else. Yet the majority of orders in the equities market from mom and pop investors are sent at the market. If liquidity dries up, as happened on the day of the Flash Crash, the constant flow of retail market orders guarantees that stocks will trade at prices that are disconnected from their fundamental valuation.

We believe that eliminating the market order would reduce disruptions and aid in the goal of achieving a fair and orderly market. Germany, Brazil, Hong Kong, and many other major markets already require investors to enter a price limit on every order. We recommend that the U.S. follow these markets.⁵

Reduce the likelihood of another Facebook IPO situation: restore moral hazard to exchanges.

⁵ For more on this topic, see "Market Madness", by Dan Mathisson, Traders Magazine, May 19, 2010. <http://www.tradersmagazine.com/news/flash-crash-opinion-mathisson-105736-1.html>

The Facebook IPO on May 18, 2012 revealed that an exchange technology breakdown can cause significant chaos in the markets and undermine investor confidence. We believe the best way to reduce the chances of similar technology problems from occurring in the future is to remove protections which grant exchanges “absolute immunity” from liability. As Self-Regulatory Organizations (SROs), exchanges have been considered by courts to be quasi-governmental units. This afforded them immunity from liability judgments in situations where the exchange was at fault. Absolute immunity may have made sense when exchanges were not-for-profit, member-owned regulatory organizations. But today, the NYSE and all exchanges are for-profit enterprises that are not particularly different from broker-dealers. While they still have a few vestigial regulatory functions, the vast majority of their regulatory responsibilities is outsourced to FINRA.

Exchanges now function as broker-dealers in many ways. For example, Nasdaq recently announced they would compete with broker-dealers by selling execution algorithms, which involve significantly more complex technology than simply crossing stock like the Facebook IPO.⁶ Complex trading technology like algorithms should go through rigorous QA (Quality Assurance) testing, and maximum caution should be exercised when rolling out new programs. We believe that providers of trading technology will naturally exercise greater caution if they have material liability when their

⁶ “Nasdaq to Offer Algorithms, Competing with Brokers”, by Nina Mehta, Bloomberg News, May 14, 2012. Article quotes Professor Bruce Weber saying, “Before electronic trading really took off, it was clear where the exchange function ended and the brokerage function began. That line is getting blurred.”

technology fails. Restoring exchanges' moral hazard would be an important step towards creating a more reliable marketplace.

This is especially important since Regulation NMS does not allow broker-dealers to ignore an exchange's bids or offers, essentially compelling brokers to trade with every exchange, whether or not they find an exchange's technology to be reliable, and whether or not they find the exchange's liability policy to be fair and equitable. Policy-makers should examine whether it still makes sense for exchanges to be considered governmental entities, given that they are no longer member-owned, no longer not-for-profit, and no longer have much of a direct regulatory function.

Are exchanges and dark pools on a level playing field?

Regulation ATS was specifically passed to allow broker-dealers to create electronic crossing networks that automated their traditional job of crossing client orders. ATS's, a subset of which are known as "dark pools", therefore operate under a different regulatory structure than exchanges. Dark pools are estimated today to execute approximately 14% of the volume in the U.S. market. Nasdaq and NYSE have claimed that regulators need to ensure that exchanges and dark pools are on a "level playing field" to protect the for-profit exchanges from losing further market share.⁷ However, the "level the playing field" argument has the situation backwards, because there is a clear and massive economic advantage to being an exchange. Within the past five years, two major ATS's, BATS and DirectEdge, both voluntarily chose to become exchanges, spending millions of dollars and devoting years of effort to make the switch. They

⁷ See "U.S. Market Structure Overview: Briefing for House Staff", Nasdaq / NYSE, June 12, 2012

became exchanges because they wanted to benefit from the four big advantages that exchanges have over crossing venues organized under Reg ATS:

The 4 big economic advantages exchanges have over ATS's:

- 1) Exchanges have absolute immunity on errors, having historically been considered quasi-governmental entities.⁸ Courts have typically ruled that exchange immunity holds even in cases of gross negligence or willful misconduct. ATS's are regular businesses that have liability for their actions.
- 2) Exchanges receive "tape revenue". The CTA (Consolidated Tape Association) has a legal monopoly on providing a consolidated stream of real-time data from our nation's stock markets. The CTA makes a profit of approximately \$400 million per year, which is then rebated to its participant exchanges based on a complex formula. The revenue that exchanges receive from these rebates is significant – for example, Nasdaq reported receiving \$116 million in rebates in 2011 from the CTA. ATS's do not receive tape revenue.
- 3) Exchanges pay no clearing fees. An ATS is a party to both sides of each transaction that passes through it, while an exchange merely facilitates the transaction. Therefore ATS's pay tens of millions of dollars in clearing fees annually, whereas exchanges pay no clearing fees.
- 4) Exchanges have no net capital requirements. Because they are not a party to the transactions that occur on their systems, exchanges do not need to hold capital to stand behind their trades.

⁸ "Nasdaq Exchange Immunity May Limit Losses From Facebook Claims", by Nina Mehta, Bloomberg News, June 13, 2012.

So with exchanges having four significant economic advantages, why haven't all the ATS's followed BATS's and DirectEdge's lead and become exchanges? The primary reason is that most of the remaining large ATS's are owned by a single broker-dealer, and current regulatory restrictions makes it impossible for a broker-dealer to own more than 20% of an exchange. Therefore broker-dealers would have to spin off 80% of their ATS's to become exchanges.

We agree with the exchanges that the regulators should "level the playing field" between dark pools and exchanges, and we suggest that the best way to do this would be to eliminate the 20% maximum on broker-dealer exchange ownership. We believe that if this restriction was lifted, most of the major ATS's would choose to become exchanges, after which the playing field would be level.

Why do some investors choose to use dark pools?

Dark pools help long-term investors by giving them an avenue to trade without revealing sensitive trading intentions to short-term traders. No one is compelled to use a dark pool - we believe that the 14% market share that dark pools have collectively achieved is a sign that investors have found they are beneficial. We believe that much of the debate over dark pools is misguided and is fueled by a desire of the old-school exchanges to avoid healthy competition.

The irony of the exchanges' frustration at the success of dark pools is that the exchanges themselves are likely responsible for much of the growth of dark pools, due to their own policies that may scare away long-term investors from posting bids or offers on exchanges. Exchanges create significant revenue selling high-speed data feeds that

deliver information faster than the consolidated tape⁹, and which contain data fields that are not available on the consolidated tape. Large investors may choose to use dark pools to avoid this dissemination of additional information that occurs when they use exchanges.

Additional dissemination of information scares institutional traders away, because big institutions and the brokers who trade on their behalf expend a great deal of effort figuring out ways to buy and sell large amounts of stock while minimizing signaling to the marketplace that a large investor is buying or selling. Traders use a variety of techniques to reduce trading signals. There are four main types of signals that can reveal a trader's intentions to others: traditional phone calls, electronic messages like "IOIs" (Indications of Interest), patterns within the "tape", and displayed bids and offers. Of these four types of signals, displayed bids and offers are the most obvious and therefore the most dangerous for investors. Therefore, the decision to display a bid or an offer is not made lightly by an institutional trader.

Before computerized "dark pools" existed, traders often chose to keep their bids and offers undisplayed, to avoid sending a signal of their trading intentions to the marketplace. This was accomplished by giving a "not-held" order to the floor brokers on the exchange who would then keep sensitive orders "in their pocket". The broker would literally drop the order ticket in his pocket, without displaying it to the world, while keeping his eyes and ears open for the other side of the trade. This process also occurred at the specialist post on the exchanges, and in the "upstairs" market, where brokers would hold client orders while looking for the other side.

⁹ In 2011, Nasdaq OMX reported generating \$334 million in total market data revenues; NYSE Euronext reported \$371 million.

A “dark pool” automates this age-old process. Traders drop orders into the computer’s “pocket.” The computer, just like the floor broker of old, does not tell anyone about the order in its pool. If the other side of the trade happens to also drop into the pool, the computer matches the two orders, and a trade occurs.

Computerized dark pools have been around since 1987. They exist because they fill a need: the need for an institutional investor to be able to trade without telling the entire world that a new buyer or seller has entered the marketplace. Since decimalization, the number of shares required to be considered potentially “market-moving” has decreased, as the average trade size dropped from over 1400 shares in 1999, to under 300 in 2009. In a decimalized environment of constant small trades, even very small orders can benefit from dark pools.

Questions have been raised about whether dark pools contribute to “price discovery.” Dark pools must report all trades to the consolidated tape immediately, and their prints are a valuable source of “last trade” data. When buying a house, buyers determine the appropriate price based on the prices at which similar houses actually sold in the neighborhood. Asking prices are interesting, but actual home sales are far more important. To assert that “last trade” data from dark pools does not contribute to price discovery is disingenuous.

Conclusion

Credit Suisse suggests four policy changes, each of which is designed to make markets more reliable than they are today, reduce investor cost, or increase fairness for investors:

1) **Repeal the rules that give for-profit exchanges immunity from liability.**

Restoring moral hazard to the exchanges will increase exchange management's level of caution on new technology rollouts and QA (Quality Assurance) procedures, and reduce the odds of future situations like the chaos that hit the market on the day of the Facebook IPO.

2) **Eliminate the market order.** A sell "at the market" is an order to sell with a price of zero. A buy "at the market" is an order to buy with a price of infinity. An easy way to reduce the chances of large gaps in prices is to force investors to enter a limit price on every order.

3) **Perform a review of the pricing and rebate system operated by the consolidated tape plans.** The CTA plans collect approximately \$400 million a year from the investing public, which then get rebated to the for-profit exchanges that collectively run the plans. These plans were set up in November 1972, when the SEC adopted Rule 17a-15. After 40 years, we believe the current tape revenue model is obsolete and rife with problems, and we recommend a full review of the tape revenue system.

4) **Lift the restrictions that limit broker-dealers to 20% ownership in exchanges.** Now that most exchanges outsource most of their regulatory functions to FINRA, we believe that this restriction is obsolete. Exchanges and ATS's are both for-profit, technology-intensive firms performing mostly the same tasks. We suggest repealing this rule and allowing ATS's to become exchanges and therefore compete on a level playing field.

Thank you for the opportunity to appear today and I will be happy to answer any questions that you may have.

Dan Mathisson

June 20, 2012

Testimony of Duncan Niederauer
Chief Executive Officer, NYSE Euronext
HFSC Subcommittee on Capital Markets and Government Sponsored Enterprises
“Market Structure: Ensuring Orderly, Efficient, Innovative and
Competitive Markets for Issuers and Investors”
Wednesday, June 20th
Washington, DC

Introduction

Chairman Garrett, Ranking Member Waters and members of the Subcommittee, I want to thank you for inviting NYSE Euronext (NYX) to discuss the current status of the U.S. equity market structure. We believe this is an issue of utmost importance to ensuring investors' confidence in markets and believe it is prudent for both the Congress and the SEC to move forward with some of the recommendations I highlight in my testimony.

NYX is a global exchange operator of 7 equities exchanges (3 in the U.S. and 4 in Europe) and 8 derivatives exchanges (3 in the U.S. and 5 in Europe). Although market structure rules in each country have their own nuances, NYX has a unique vantage point from which to compare each country's markets and learn from the experiences of our European colleagues and market participants.

In accordance with the invitation we received from the Subcommittee, we will focus our attention on (i) the current equity market structure, (ii) items we believe deserve the attention and review of the Congress and the SEC, and finally (iii) possible solutions we believe will assist in both leveling the competitive landscape for the trading of securities and increase investors' confidence in U.S. markets.

Market structure reform raises a number of highly complex competitive and regulatory issues. Market microstructure changes implemented over the past few years, coupled with the continued automation of securities markets, have led to an explosion in both innovation and operational challenges. In assessing whether further reform is needed, it is important to highlight that our markets typically function seamlessly and without interruption. Many of the practices that I am going to speak about today are indeed beneficial to the individual parties to such transactions. However, the regulatory framework governing our market structure must take account of the aggregate impact of these individual practices on the quality of our markets as a whole, as well as whether the existing market structure and regulatory regime are fair to all market participants. Is it fair, for example, that a small number of participants in private markets receive the highest quality orders, with no benefit to the public markets? Should different markets that perform identical functions be subject to different regulatory requirements, with certain of those markets under a much lighter regulatory burden? Does it make sense that one-

third of the market does not provide public quotations of the prices at which securities may be bought and sold, or that certain venues have to provide fair access to their markets, but others do not? Why has the volume of securities trading in dark pools tripled over the past few years, despite the intent of Regulation NMS to incent the public display of securities orders? The complexity of our markets and cacophony of self-interested arguments seems to have led to paralysis on important matters of market structure reform. We should not wait for another May 6th to address these logical questions.

Fair Competition among our markets should produce confidence among investors

Even as our securities markets have evolved through competitive and regulatory innovation, regulators and many market participants have remained focused on certain core principles: fair and stable markets and capital formation. A 1975 Senate report on the national market system stated that “one of the ‘paramount’ objectives for the [system] is ‘the maintenance of stable and orderly markets with maximum capacity for absorbing trading imbalances without undue price movements.’”¹ The SEC specifically referenced this objective in 2005 again when adopting Regulation NMS. In moving to implement the market structure reforms of Regulation NMS, the SEC also affirmed its “firm belief that one of the most important goals of the equity markets is to minimize the transactions costs of long-term investors and thereby reduce the cost of capital for listed companies.”² In its 2010 Concept Release on Equity Market Structure, the SEC also noted Congress’ focus on providing for fair competition among broker-dealers, exchange markets and non-exchange markets.³ Another important core objective of the SEC is to facilitate the availability to brokers, dealers, and investors of reliable information regarding quotations and transactions in securities.

In most developed markets, there is one “national” stock exchange. However in the United States, there are upwards of 250 competing trading venues, which include exchanges, dark pools, electronic communication networks, and broker-dealers.

This competition has spurred tremendous innovation in the form of increased automation and speed of trading, greater reliability of trading systems, and improved functionality. Most importantly, the combination of regulatory changes has benefited investors. Reforms such as decimalization in 2000 and competition among trading venues have resulted in a reduction in quoted spreads (that is, the difference between the price at which sellers sell and buyers buy). This decrease in quoted spreads reduces transactions costs and thus increases returns to investors, a positive development for investors.

Despite the positive effects of competition for investors, many investors nevertheless lack confidence in our securities markets. A number of factors have contributed to this lack of investor confidence, including some aspects of the structure of our equity markets. While some market participants consider volatility to be in their interest, long-term investors look to market

¹Regulation NMS, Exchange Act Release No. 51808, 70 Fed. Reg. 37496, 37500 (June 29, 2005) (“NMS Release”).

² NMS Release at 37499.

³ Concept Release on Equity Market Structure, Exchange Act Release No. 61358, 75 Fed. Reg. 3594, 3596 (Jan. 21, 2010) (“Concept Release”).

stability as the basis for confidence to commit capital. Market stability also gives companies seeking to grow their businesses the confidence that capital will be available to them when needed to invest in job-creating expansions of their businesses.

Not surprisingly, significant negative events in the equity markets adversely impact investors' confidence in the markets. As the Joint CFTC-SEC Advisory Committee on Emerging Regulatory Issues noted, "[w]hile many factors led to the market events of May 6, 2010, and different observers place different weights on the impact of each factor, the net effect of that day was a challenge to investors' confidence in the markets."⁴

Capital flows in the equity markets over the past several years underscore a lack of investor confidence in the securities markets. For example, data on investments in equity mutual funds suggest that investor confidence in the equity markets is at risk. The data show that over the last several years, investors, particularly small investors, have withdrawn billions of dollars from domestic equity funds. As with investor confidence generally, significant negative market events seem to affect negatively investors' participation in the equity markets. For example, the equity markets experienced increased capital outflows after the market events of May 6th. Perhaps more significantly, however, investor withdrawals in recent years have continued even in the absence of significant events and even during periods of increases in the US stock prices. This behavior is inconsistent with historical patterns that show that investors typically invest in the equity markets during times of rising prices.

Increased market competition has also led to unintended negative consequences

During the past decade, and particularly since 2006, the exchanges operated by NYX have embraced, and been fundamentally transformed by, competition among the various securities markets. One of the driving forces behind NYX's transformation, as the SEC has noted⁵, has been the SEC's effort to modernize and strengthen the national market system for equity securities, particularly through Regulation NMS, which it adopted in 2005.

In March 2006, the SEC approved the beginning of the New York Stock Exchange's (NYSE) historic shift from a floor-based auction market with limited automated order interaction to a more automated market with limited floor-based auction market availability. With the approval of the "Hybrid Market," the NYSE began the substantial expansion of automatic execution of orders to buy and sell securities, and the ability of its floor members to participate in its automated market electronically. At the time of approval, automatic executions on the NYSE represented approximately 11% of its market share volume, and the bulk of executions occurred manually in its floor-based auction. The average speed of execution was over ten seconds and NYSE's share of consolidated volume in NYSE-listed securities for the year preceding the approval of the Hybrid Market was about 75%.

⁴ Recommendations Regarding Regulatory Responses to the Market Events of May 6, 2010: Summary Report of the Joint CFTC-SEC Advisory Committee on Emerging Regulatory Issues. The recommendations are available at <http://www.sec.gov/spotlight/sec-cftcjointcommittee/021811-report.pdf>.

⁵ Concept Release at 3494-3495.

Roughly two years later, the NYSE proposed further and substantial structural reforms with the introduction of its New Market Model. Foremost in significance were: (1) the phasing out of the specialist system and the concurrent creation of the Designated Market Maker, referred to as a “DMM”; (2) the alteration of the NYSE’s longstanding priority and parity rules to allow DMMs to freely trade on equal footing with other market participants where the specialist previously had been obligated to yield to public customer orders in the book; and (3) the elimination of the advance electronic “look” at incoming orders that had been a historical feature of the specialist system. In 2009, the year following the adoption of the New Market Model, NYSE’s share of consolidated volume in NYSE-listed securities had fallen from 25% to 25%. By 2009, the average speed of execution had fallen from about 10 seconds to less than a second. And between 2005 and 2009, the average trade size in NYSE-listed securities fell from 708 to 344 shares. These structural reforms and the highly competitive market conditions under which they occurred were nothing short of transformative.

The NYSE has undertaken these reforms to meet the needs of market participants while maintaining certain manual market functions. Moreover, the NYSE has maintained these manual elements in the face of tremendous regulatory and competitive pressure to become fully automated. We believe that the flexibility to intervene in markets manually is necessary to maintain orderly markets, as the efficacy of manual intervention during the events of May 6, 2010 demonstrated.

Although structural reforms of securities markets have led to increased competition, those reforms have also had unintended negative consequences. The reforms created lower barriers to entry for new trading venues—some of which lack price transparency with respect to the securities transactions that are executed through them. These alternative venues also operate under a less rigorous regulatory framework. Both of these have led to a dramatic rise in off-exchange trading.

Consolidated, transparent prices form the core of our market system. We believe that investors are more likely to have confidence in the securities markets if they believe that they are receiving fair prices when they buy and sell securities. As trading volume has shifted to new trading centers that operate with less transparency and fewer regulatory requirements, more and more information is outside of public view and excluded from the price discovery process. With incomplete public information concerning the full extent of market activity, combined with ever-increasing complexity regarding routing practices and sometimes limited transparency, it can be difficult to assess whether a customer is getting best order execution. The SEC noted in the release adopting Regulation NMS that “[i]mpaired price discovery could cause market prices to deviate from fundamental values, reduce market depth and liquidity, and create excessive short-term volatility that is harmful to long-term investors and listed companies.”⁶

Regulated exchanges, such as the NYSE, serve as *price-makers*. Price makers are critical to the price discovery process as they show the best available quotes for securities on both sides of the market (the lowest prices at which sellers are willing to sell and the highest prices at which buyers are willing to buy). These best available quotes, referred to as the national best bid and

⁶ NMS Release at 37499.

offer (NBBO), are constantly changing with activity in the markets. Price makers show the NBBO at any given point in time.

Alternative trading venues, by contrast, are *price matchers*: they match willing buyers and sellers that participate in their venues, but do not contribute to price discovery by displaying quotes to be included in the NBBO. That is, the off-exchange trading centers provide so-called “undisplayed liquidity”. We recognize that undisplayed liquidity has played a role in equity market structure, in one form or another, for many years. For example, it can serve an important function for investors seeking to trade large blocks of securities. With the development of non-exchange trading venues and new trading practices, however, undisplayed trading now accounts for a substantial volume of overall equity trading. But we need to ask ourselves at what level does price discovery materially suffer from gains in the market share by *price matchers*?

Protecting investors requires listening carefully for cautionary signals

Investors’ confidence in a price discovery mechanism greatly contributes to their willingness to continue to invest their money, whether through a broker-dealer or through mutual and pension funds (where most Americans keep their life savings). However, there are several cautionary signals regarding the vibrancy of the national market system as a pricing mechanism.

The primary factor contributing to the loss of vibrancy in the pricing mechanism is the increasingly bifurcated equity market structure. As discussed, an ever-increasing volume of trading in equities occurs in dark markets. Today one-third of all equity trading takes place off exchange and over 1200 securities have more than 50% of their volume traded off-exchange, an increase of 143% in less than 2 years.⁷ While NYX fully recognizes the legitimate functions served by off-exchange trading models, there is a point at which the aggregate amount of off-exchange trading is detrimental to price discovery and investor confidence.

Order execution has always started with an investor and the investor’s broker-dealer. Once an order is submitted, the broker-dealer has had the option of internalizing that order, meaning it can trade against the customer itself, or routing the order to an exchange where that order is included in establishing the best price. Since the implementation of Regulation NMS, broker-dealers now have at least 4 options: internalizing the order, routing it to one of over 200 other broker-dealers, routing it to any one of more than 40 dark pools, or routing it to an exchange where the order will likely contribute to establishing the best price. These options have increased because technology has enabled and the SEC has permitted non-exchange trading centers to create a very sophisticated web of connectivity which allows them to give select groups of traders and clients access to those orders before anyone else – each with its own level of conflicted interest. It is only after select customers have determined they do not want to execute the order that the order finds its way into the public markets, and only then does the order have the opportunity to contribute to the price discovery process. It is also important to note the increased industry conflict that has grown alongside these market structure evolutions. As I previously noted, exchanges have demutualized, but at the same time most of the non-exchange activity occurs on venues that are owned by brokers who frequently have an agency

⁷ NYSE Trades and Quotes (TAQ)

responsibility, but also a profit motive, for the orders that they handle. This lack of independence and objectivity, alongside the lack of transparency, clearly influences decision-making and the philosophies of industry participants more than in the past.

Intuitively, as this bifurcation grows and more volume moves toward non-exchange trading centers, the price discovery mechanism deteriorates. However, there is also data that reinforces this intuition and it is this data, in large part, which has NYX, NASDAQ OMX and BATS exchanges concerned. A recent report issued by Rosenblatt Securities shows that dark pool market share is traditionally inversely proportional with volatility.⁸ This means that traders retreat to the public markets (exchanges) when markets are stressed. The market events of May 6th, 2010 are the best evidence of the retreat to public markets during times of volatility. As the CFTC-SEC Advisory Committee stated in its final report on the events of May 6th, so-called internalizers, such as OTC market makers and block positioners, decreased their internalizations during these market events. That is, they decreased the volume of their customers' orders that they executed on a principal or riskless principal basis. In some instances, when they tried to route these orders to other internalizers or to dark pools, the orders were rebuffed. In such instances, "[i]nternalizers instead routed orders to the exchanges, putting further pressure on the liquidity that remained in those venues."⁹

A study by Professor Daniel Weaver of Rutgers Business School provides evidence of a causal link between dark trading and market quality. Professor Weaver found empirical evidence that higher off-exchange trading is associated with a reduction in market quality, and in particular with wider spreads, increased price impact, and volatility from less available exchange depth.¹⁰

A common argument made in support of the growth in off-exchange trading is that spreads have decreased dramatically as a result of the increased level of competition to exchanges through the adoption of Regulation NMS. However, since 2006, in percentage terms, spreads are actually wider by 2.9 basis points.¹¹ Again, what this tells us is that there is a dilution of market quality to the detriment of investors.

Finally, as evidenced in SEC Rule 605 data, it appears that higher quality order flows are being routed to dark markets. As a result, orders sent to exchanges and incorporated into the public quote – the only price discovery function – is the more toxic order flow. For example, in March 2012, NYSE-realized spreads were 0.3 basis points versus 3.9 basis points for executions reported to the TRF. This means that execution prices in off-exchange venues move 3.9 basis points over a five minute period whereas they only move 0.3 basis points when executed on NYSE. This data suggests that sophisticated market participants executing against order flow in

⁸ Rosenblatt Securities, Inc., Market Structure Analysis and Trading Strategy: Let There be Light, Justin Schack and Alex Kemmsies, May 31, 2012.

⁹ Findings Regarding the Market Events of May 6, 2010: Report of the Staffs of the CFTC and SEC to the Joint Advisory Committee on Emerging Regulatory Issues (Sept. 30, 2010) at 58. The report is available at <http://www.sec.gov/news/studies/2010/marketevents-report.pdf>.

¹⁰ Daniel G. Weaver Study available at: <http://www.sec.gov/comments/s7-02-10/s70210-127.pdf>.

¹¹ NYSE, CQS, UQDF

off-exchange venues are more likely to capture revenue from that trade than if the same execution were done on an exchange, highlighting the desire for sophisticated investors to conduct more off-exchange trading despite the policy questions about best execution and price discovery.

The focus of securities regulatory policy should be on improving public confidence

Each of these data points suggest there is reason for Congress and the SEC to be concerned that without action, we leave ourselves open to a greater loss of investor confidence and market stability. To solve the problem, policymakers should focus on establishing fairer and more transparent equity markets, as well as a more level playing field among trading centers and investors.

I am certain that you will hear arguments from industry participants that the equity market structure is as good as it's ever been. We agree. However, while we recognize that things are better than they were 15 years ago, better does not mean there aren't practices to be improved, or that every practice that has evolved has had a positive effect on investors. Additionally, we believe the cost to the market from activities that may be good for a small group of individuals has overtaken the benefits, and we need to find a way to maintain a better balance for the public good.

The time has come for policymakers to bring perspective to the public. We fear that as a result of too much focus on market microstructure incrementalism, there has been too little public discourse on the formidable reliability and resilience of the equity markets during crises and overall fairness to investors. Public confidence stems in part from policy leadership and we need this policy leadership to come from inside the Congress, the Administration and industry in order to achieve a better market structure and to restore confidence to investors for the betterment of our public markets and companies who need long-term capital to grow and produce more jobs.

While not all of the solutions we're putting forth today are going to be popular with our own customer base, we believe putting all the options on the table, regardless of their popularity, is necessary if we're going to have an intellectually-honest discussion. Obviously all market participants, including us, have self interest in any outcome, but the current market structure yields an unlevel playing field not just for interested parties but also for investors, which has an adverse impact on public confidence in markets – something that hurts us all.

We believe the items outlined below would have the greatest positive impact if implemented in whole or in part.

Promote public price discovery

As previously discussed, we believe that investor confidence in markets is of utmost importance and that a deterioration of price discovery is not only bad for exchanges and markets, but also contributes to a lack of investor confidence. As discussed in our comment letter to the SEC's Concept Release we believe internalization should be permitted, provided the

internalizing firm simultaneously displays a protected quote at the NBBO or provides meaningful price improvement over the NBBO. The exchange believes this approach accomplishes several goals. First, requiring a contribution to the NBBO will result in a greater number of orders included in the price discovery process and therefore assist in establishing an NBBO that better reflects the “true” market. Additionally, if an internalizing firm does not want to contribute to the NBBO, investors’ orders that are internalized will need to receive meaningful price improvement over the NBBO.

Create a consolidated audit trail that can adequately surveil the market

NYX believes that a consolidated audit trail is necessary to appropriately surveil the U.S. capital markets. Neither the SEC nor private industry has the resources to surveil markets in real-time. This is why NYX and FINRA jointly supported the SEC adopting a rule two years ago that would have advanced the project by using existing infrastructure to create an audit trail with end-of-day reporting. It is unfortunate that a consolidated audit trail has still not been adopted but we are optimistic that the SEC will seek adoption of a proposal in the near term.

Move forward with outstanding rulemaking proposals

We believe that the SEC should move forward with its proposals to include actionable indications of interest within the definition of bids and offers; to reduce the threshold for display of dark liquidity; and to establish post-trade transparency for dark pool executions as was proposed in its 2009 proposal, Regulation of Non-Public Trading Interest.¹²

Level the competitive playing field

Regulation NMS brought competition to the exchange space and broke down the duopoly of the NYSE and NASDAQ. As a result there are currently 13 equities exchanges. However, despite the increased competition in public exchanges, advances in technology and connectivity among Alternative Trading Systems and broker-dealers have led to one-third of all trading taking place off-exchange not all of which is positive for U.S. capital markets or investors. Because of these issues, we believe that changing the following items would create a fairer, more level playing field between exchanges and non-exchanges.

SEC Filings. Registered exchanges are required to make public rule filings concerning various changes to their businesses. The regulatory process often includes a substantive review and takes considerable time and effort to complete. The current rules also require exchanges to make public disclosures regarding business strategies and fee structures. In contrast, ATSs are required to make only limited notice filings on Form ATS twenty days prior to implementing any material changes. This regulatory inequality allows ATSs to innovate quickly without SEC approval, while exchanges must undergo a rigorous and lengthy regulatory review process to initiate change.

¹² SEC Release No. 34-60997; Regulation of Non-Public Trading Interest

By way of example, NYX filed a proposal with the SEC after over 9 months of negotiations with staff. The innovative proposal, which would guarantee retail customers price improvement, is the first of its kind to allow exchanges to segment retail order flow from other order flow. The proposal received opposition from several dark markets due to the program's guarantee of price improvement and the likely outcome that it may attract valuable order flow away from the dark trading venues. First filed publicly with the SEC in November 2011, the SEC has still not taken action over 220 days later. During that time, non-Exchanges have had the opportunity to object to the proposal and our exchange competition has had the opportunity to develop their own similar programs to propose. We believe that the costs associated with going through this process do not outweigh the benefit of the SEC's review process. However, it is the competitive advantage that non-exchanges have over exchanges that troubles us most. The lack of regulatory scrutiny of non-exchanges also can lead to the proliferation of unfair trading practices such as the flash order structure and actionable indications of interest privately transmitted by non-exchanges to only select market participants.

Fair Access. Registered exchanges are required to have membership rules and procedures specifically designed to ensure access to exchange facilities is granted in a fair and impartial manner. The fair access requirements applicable to ATSs are far narrower. ATSs must comply with general fair access requirements only if a five percent trading volume threshold in an individual security is exceeded, and certain exceptions apply. The narrower fair access requirements have resulted in extreme levels of discrimination by ATSs against their customers. For example, dark markets often segment certain customers from others, giving one customer a first look at the order flow the ATS receives before showing it to other customers. In fact, it is common practice for orders to flow through many non-exchange trading centers before being executed. Although certain retail customers benefit from this process, pension funds and mutual funds that represent the majority of retail investors in the markets are often not allowed access since they too have more sophisticated trading strategies. Accordingly, NYX believes comparable fair access requirements should be applicable to all venues.

Market Surveillance. Under the current market structure, registered exchanges have self-regulatory responsibilities and must either maintain an extensive regulatory organization to conduct market surveillance or enter into a regulatory services agreement with another self-regulatory organization, either of which involve significant time and resources. Non-exchange trading venues are not subject to the same rules and are free from any self-regulatory requirements. NYX estimates that it will spend nearly \$85 million for U.S. equity market surveillance in 2012; however our exchanges only accounted for 24.7 percent share of U.S. equity trading in May 2012. We believe all market centers should share the same responsibilities and contribute to the cost of market surveillance based on their respective market shares. In addition, NYX believes consideration should be given to the establishment of one self-regulatory organization with responsibility for surveillance across the entire marketplace.

These general issues of client segmentation, fair access and market surveillance also highlight the excessive level of focus on the "trees" rather than the "forest." While there continues to be increasing levels of compliance focus on Exchanges' rules and prohibitions, the level of activity that is not subject to any of these requirements continues to grow unfettered.

Addressing market structure for SMEs

As another NYX executive testified last year before the House Oversight and Government Reform Committee's Subcommittee on TARP, Financial Services and Bailouts of Public and Private Programs, companies with small capitalizations consistently raise two market-structure concerns in connection with their initial public offerings: will there be sufficient interest in the company's stock will there be sufficient analyst coverage of the stock to attract long-term investors. These two concerns highlight the reason both short-term liquidity providers and long-term investors are necessary to provide Small and Medium Enterprises with the capital they need to grow their companies, while maintaining an investor's confidence that they will have the ability to exit their positions when desired.

As the SEC recognized in the Concept Release, small cap stocks can – and often do – trade differently from large cap stocks. One area of concern is whether the current market structure itself, which treats all stocks similarly, impacts small cap stocks in an adverse manner. In particular, we have observed less liquidity at the NBBO for small cap stocks and less exchange activity in less-liquid securities, which we believe may be the result of too-narrow minimum tick size. While narrower spreads are generally a positive result for investors, especially in more liquid securities, we believe a \$0.01 minimum tick size for low-cap stocks may counter-intuitively create a disincentive to provide liquidity at the best price, resulting in smaller quoted sizes and thinner markets. In addition, it is also likely that deeper liquidity in smaller cap stocks as a result of wider spreads may lead to additional volume and with additional volume there may come increased analyst coverage.

Accordingly, NYX has advocated that a market-wide pilot program requiring wider spread increments for less liquid securities could be a worthwhile experiment. During the pilot period, market participants and the SEC could review data to determine whether the impact is providing added investor benefits to less-liquid securities. A pilot program would also provide the SEC with additional data that can be utilized in a cost-benefit analysis should it decide to make the pilot permanent.

With regard to Chairman McHenry's draft legislation, we believe the creation of a program in which exchanges could provide incentives to market makers for meeting liquidity requirements is a worthwhile endeavor. In fact, NYX currently has a proposal out for comment with the SEC that would allow a similar pilot program for exchange-traded products.¹³ Today, market makers receive more favorable economics for meeting our market maker liquidity and quoting requirements as their primary incentive from the exchange to provide liquidity. Although FINRA rules adopted in 1997 prohibit any direct or indirect payment by an issuer to a market maker, NYX believes Chairman McHenry's legislation may warrant further review by both FINRA and the SEC, and is a topic that we have been pursuing. We would also note that this is a process allowed in Europe and academic research has shown beneficial effects on the liquidity of smaller issuers.¹⁴

¹³ NYSE Arca Lead Market Maker Issuer Incentive Program; SEC Release No. 34-66966.

¹⁴ Johannes A Skjeltorp and Bernt Arne Odegaard (2011). "Why do listed firms pay for market making in their own stocks?"

The JOBS Act and NYSE Big StartUp

Finally, I want to provide a few comments on the the JOBS Act that this Committee and others in Congress were instrumental in passing. The struggling U.S. economy received a welcome boost when the JOBS Act survived our divided Congress and received President Barack Obama's signature. The passage of this new law signals that leaders in both parties understand that providing targeted, temporary relief to small businesses seeking to access capital is critical to the recovery.

Small businesses account for 99 percent of all U.S. companies, make up half of private sector employment, and have accounted for almost all net job growth in the U.S. over the last three decades. Yet today, many entrepreneurs with the ability to turn innovative ideas into successful, job-creating businesses do not have adequate access to capital. By phasing in certain regulations on small firms, the JOBS Act will help open new sources of capital for growing companies at a critical stage in their development.

We believe exchanges have a responsibility to help small companies grow by providing entrepreneurs with a source of capital. In the best of times, exchanges may facilitate a hundred or more companies executing an IPO each year. However, given the scale of our current jobs challenge, exchanges must look beyond the IPO and offer new avenues to allow small businesses access capital markets.

Last month, NYX joined with other organizations to launch an initiative aimed at accelerating growth for small businesses. Our idea, "The NYSE Big StartUp", is aimed at encouraging big companies to help small companies. It's a pathway for corporate America to provide banking services, financial training, accounting services, legal services, marketing and logistics support, website construction, and other essential tools to enable small companies which lack those resources to get to the next level. The program also offers training, mentoring and education programs for startups and entrepreneurs, as well as a fund to help ensure that capital is available to those least able to access it from traditional sources.

Getting America's entrepreneurial engine firing on all cylinders requires cooperation between the public and private sectors. Good public policy, such as the JOBS Act, ensures that entrepreneurs and small businesses have access to the capital they need to expand and thrive. American corporations want to and must be part of the solution as well. Small businesses and entrepreneurs are our neighbors, our customers, and our futures. It is time to unleash the unparalleled innovation and creativity of American business to find solutions even more powerful than the economic challenges we face.

Conclusion

In closing, I want to reiterate our belief that although our capital markets are the best in the world, the data we've discussed suggests there remains room for improvement. Our arguments for change are simple: promote market structure changes that enhance transparency and level the playing field for both trading venues and investors.

Thank you for allowing me to testify and I look forward to your questions.

Testimony Concerning

**“Market Structure: Ensuring Orderly, Efficient,
Innovative and Competitive Markets for Issuers
and Investors”**

by

William O'Brien
Chief Executive Officer
Direct Edge

**Before the House Committee on Financial Services
Subcommittee on Capital Markets and Government Sponsored Enterprises**

June 20, 2012

Chairman Garrett, Ranking Member Waters, Vice Chairman Schweikert and Members of the Subcommittee, I would like to thank you for the opportunity to testify today on behalf of Direct Edge, the operator of the one of the largest stock markets in the nation and the world. Over the past five years Direct Edge's market share of U.S. stock trading has risen to approximately 10 percent because we have innovated in response to changing market structure to provide new solutions for brokers and their customers. This innovation is possible only in an atmosphere of continued investor and issuer confidence in our nation's markets and how they are regulated. As discussed in our remarks, we believe this confidence to be at a low point, and that we are in need of targeted efforts to improve it. In this regard, the work of the Subcommittee in conducting this hearing is timely and valuable.

Direct Edge believes that through careful examination, appropriate steps can be taken to improve investor confidence in a fair and orderly market without restricting innovation, competition or efficiency. To this end, Direct Edge offers the attached Statement of Market Structure principles that we believe should guide any reforms, in order to focus the current dialogue on what really matters – improving our stock market for the benefit of the nation's investors.

Statement of Market Structure Principles

Direct Edge

“Restoring Confidence”

June 20, 2012

Introduction

Investor confidence in U.S. equity market structure is perhaps at its lowest point since the Great Depression. A 2010 Associated Press/CNBC poll showed that 86% of respondents believed that the stock market was “not generally fair” to small investors. Since that time, several high-profile incidents have led the investing public to seriously question whether the stock market is on a sound operational footing. You can question the merit of such concerns – but you cannot deny they exist.

An intellectually consistent and operationally feasible plan is needed to start the process of restoring that confidence. This is essential to return the stock market to its rightful place – for investors and entrepreneurs alike – as a pivotal tool for achieving the American dream. Small investors will have great difficulty reaching their financial goals if they are driven to primarily invest in “risk free” assets due to confidence-related concerns. Small companies will find their access to equity capital markets limited without a vibrant secondary trading markets for equities, inhibiting corporate growth and the job creation that comes with it. Collectively, a healthy stock market is a critical element of building an ownership-based society where Americans are increasingly united in the common goal of furthering prosperity. A healing process needs to occur, and actions will speak louder than words. Direct Edge remains hopeful, because we believe that there are relatively simply and tangible steps that can be taken to start the work of restoring investor confidence.

In this vein, Direct Edge offers this statement of the principles, and related actions, it believes will help restore investor confidence and provide a better environment for the trading of small and large-company stocks alike. In doing so, we hope that like-minded market participants will proffer their support, in whatever means they find advisable, in order to focus the current dialogue on what really matters – restoring faith in our nation's stock market for the benefit of all. Whether you agree in whole, in part, or not at all, we hope you find in these principles a healthy construct in which to discuss the issues and chart a path forward.

1. Monopolies are not the answer – more efficient competition is

Some argue that confidence is undermined by the choices that investors have or the alleged complexity of navigating them. Often this coincides with claims that efforts should be made to re-consolidate trading into a smaller number of venues, pleas to “level the playing field” by severely restricting certain business models, or giving regulators or issuers the ability to create new market monopolies. Retail order handling, “dark pools” and other trading alternatives often bear the brunt of these criticisms. This is the wrong path to pursue.

Direct Edge does not believe investors will have more confidence in the stock market by reducing the number of choices that investors and their brokers have. People don't think the soap market is unfair because there are 500 different kinds of soap. And they don't think the stock market is unfair because there are 50 places to execute their trade. The proliferation of trading alternatives has only served to lower costs, improve technology and give each investor a solution that is better tailored to their trading and investing needs.

At the same time, cooperation among competing venues does need to be improved. The May 6, 2010 “flash crash” and recent IPO troubles were not caused or made worse by fragmentation, but by insufficient communication and coordination between exchanges to deal with these situations. During the recent IPO-related issues, the relevant listing exchange had a total monopoly, and were “single points of failure” that in fact, failed. This was exacerbated by the lack of sufficient market-wide communication while events unfolded. At Direct Edge, we had no greater visibility into what was occurring than the average retail investor. No hotline, no market-wide escalation procedures, no nothing.

We can easily improve this, and the work has already started. The market-wide single stock circuit breakers and recent SEC approval of a “limit up/limit down” mechanism help assure that all trading venues will deal with sharp and sudden changes in stock prices in a cohesive manner. More work can be done to ensure that in key market events – especially when things go wrong – all the exchanges can quickly and effectively work together to prevent problems from cascading and protect investors.

2. Rather than restrict off-exchange trading, exchanges should have greater freedom to make their markets more appealing to retail and institutional order flow

Even though Direct Edge is one of the world's largest stock exchange operators, we do not believe that exchanges have some divine right to execute every trade. To start with the premise that there is an "unlevel playing field" is unfairly accusatory and alarmist, and does nothing to restore investor confidence. While it is true that exchanges and non-exchange venues have different responsibilities and privileges, the focus should be on ensuring that exchanges can consistently provide great results for a broad spectrum of investors. Direct Edge believes we are better as both a country and a company when exchanges have to earn their business, and have a robust capability to do so.

Exchanges are at times hamstrung, however, because of the current application of the principles of "fair access" under federal securities regulation. Exchange efforts to provide a better experience for retail and institutional orders are often reviewed under the principle "if it isn't made available to everyone, it can't be made available to anyone". As a result, exchanges can be constrained in their efforts to provide a better environment for retail and institutional investors. This can lead the firms who manage this order flow to seek off-exchange executions. There is nothing nefarious about this, in fact it is consistent with the duty of best execution. If exchanges don't offer the best trading experience, trading volume should and will go elsewhere.

Section 6 of the Securities Exchange Act of 1934 should be modified to clarify that exchanges have the freedom to provide tailored solutions for institutional and retail orders. Stock exchanges function best when diverse participants all believe they are getting a near-optimal outcome. This gives them the confidence to submit their order into a trading venue with maximum transparency, price discovery and liquidity. Rather than criticize the increase in off-exchange trading, empower exchanges to offer a better product and experience to long-term investors. Not only would this help restore investor confidence, it would prospectively improve trading outcomes.

3. Enhance SEC Oversight of Exchange Technology

Exchanges play a special role in our capital markets with respect to both investor confidence and capital formation. In the minds of most American investors, it is assumed that exchange operations are rock-solid. That assumption has been seriously undermined by recent events. No exchange, Direct Edge included, has been immune to this.

The rise of for-profit exchanges, the dynamic nature of our business, and some exchanges' continued push into related technology businesses has created the potential for conflict between exchanges' risk-management practices and their profit motive. While this tension between short-term rewards and longer-term risks exists in almost all businesses, the role of exchanges in preserving investor confidence makes proper balancing of these needs particularly acute. Regulators have been vigorous in their efforts to oversee exchange technology practices, but their mandate should be strengthened further in this area.

The priority and primacy of these efforts can be augmented by formally proposing and adopting the SEC's Automation Review Policy ("ARP") as official regulation under the federal securities laws. The risk-management practices currently reviewed as part of ARP inspections are comprehensive, covering several areas that have been recent sources of investor concern: information security, quality assurance testing, and incident management to name just a few. Direct Edge has made considerable investments of time, talent and technology in response to feedback provided by ARP examiners. The ARP program, however, is still technically voluntary for most trading venues. This allows exchanges and other impacted market participants considerable leeway in negotiating with regulators about what risks should be addressed and when.

Proposing and adopting ARP as an official rule of the Commission would provide even greater authority to ensure that complex trading technology and infrastructure is managed prudently and with the ongoing stability of our stock market as a principal objective. It would send a powerful message to investors that regulators recognize the impact of the series of "glitches" our markets have suffered, and are working to further mitigate these risks.

4. Incentivize and ensure the responsible use of technology rather than seeking to turn back the clock

The debate over the fairness of the stock market has been unique in its criticism of the technological advancement that has swept every aspect of American life. By almost any measure, the transition from manual to electronic trading has lowered costs, improved execution quality and access to liquidity for retail investors. Automation has also significantly improved market consistency, made the “paper trail” easier for regulators to follow, and allowed for the quick and effective implementation of solutions like the post-“Flash Crash” single-stock circuit breakers. Thus the increasing automation of the stock market should be viewed as something that works to greatly improve investor confidence. But yet it remains a significant source of angst.

Efforts to make trading slower generally, or restrict the technological capabilities of certain players are both unfeasible and undesirable. They would not make our markets safer, sounder or stronger. And there would be no rational argument that investors should feel more confident in investing in equities as a result. More likely outcomes are that: (i) significant implementation issues would prevent these measures from working as planned; and (ii) technologically-advanced trading would migrate off-shore. Either would work to further undermine investor confidence in both the short and long term.

Efforts can be made to encourage and monitor how trading technologies are used so the benefits automation brings are not overshadowed by aberrant or inefficient behavior. Direct Edge was the first U.S. stock exchange to announce and implement a program intended to impose economic penalties on trading firms that had excessively high message-to-trade ratios. Our Message Efficiency Incentive Program prompts trading firms to examine their behavior and suffer the consequences if they choose to flood our market with orders that seldom or rarely result in trades. This gives our members the freedom to use technology as they see fit but at the same time the responsibility to use this technology efficiently. This notion of shared responsibility should be the foundation of any effort to ensure that market technology is used prudently.

5. Investors should have transparency regarding where their orders are routed, in addition to where they are executed

It is difficult to have confidence in a process when you have limited visibility. When it comes to the trading of stocks, there are countless ways for an order to be managed in light of the facets of execution quality – such as immediacy, explicit fees and market impact – and the preferences of the relevant investor. Most investors want to delegate the responsibility to manage these aspects of execution to their chosen broker, while still having the order-handling information necessary to hold them accountable. When you don't know what is going on behind the scenes, it is hard to have absolute faith that your interests are being fully served. Trust, but verify.

One of the consequences of greater investor choice and increasing market technology is that it can be hard for an investor to answer the basic question – “what happened to my order?” Investors can be left wondering if they have complete information and brokers are more susceptible to allegations – substantiated or not – of order mishandling. Where information can be efficiently used to allay these concerns, it can help restore confidence not only in an investor's ability to choose a broker, but in the market itself.

There are multiple ways to efficiently achieve this objective both on a holistic and an order-by-order basis. The order-routing disclosures of SEC Rule 606 could be expanded to list not just exchanges and other market centers where investor orders are executed, but where they are routed (whether executed or not) as well. For institutional and other savvy investors, standardized market identification codes can be implemented to provide this information on an order-by-order basis. Measures like this will “pull back the curtain” from the order-management process, and rather than revealing general malfeasance, show what is true – thousands of professionals hard at work to give investors great execution outcomes every day. And any sub-optimal order-handling practices will be much easier for investors and regulators to spot and hold the relevant parties accountable.

6. Regulation should be made more flexible to enhance the trading experience for smaller companies

Just as all investors are not created equal, each listed company has a variety of unique attributes and needs. From the international consumer conglomerate to the start-up bio-tech company to the white-hot social media juggernaut, the reasons for utilizing the equity capital markets vary greatly, as do their needs regarding secondary-market trading.

An unintended consequence of Regulation NMS is the tendency to impose a “one size fits all” version of market structure on issuers, regardless of their characteristics and needs. The small cap stock with a trading volume of 10,000 shares per day is traded within the same market structure as Bank of America, with a daily volume of 25,000 times that amount. While the reasons companies decide if and when to go public extend far beyond market structure concerns, the trading environment presents challenges for smaller companies. As a result of all these factors, potential public companies may remain private for longer periods. This in essence lures investors interested in these companies into trading on private markets which require less financial disclosure, have increased trading cost and reduced transparency. Work needs to be done to get the next generation of great American companies listed and trading on the public markets.

The legislative proposal put forth by Representative McHenry would be an important first step in making exchange markets a more hospitable place for small public companies. The proposal, which would allow exchanges to create and administer incentives to ensure the provision of liquidity for their stocks, would give companies more meaningful choices. The ability to realize the benefits of the public markets without concern that you would be “orphaning” your new investors in a market with little liquidity would increase the confidence of both CEOs and fund managers alike to encourage the pursuit of the IPO alternative. There are many ways to raise capital, but an exchange IPO is a uniquely important event in the growth cycle of a good company. All reasonable ideas in furtherance of making this alternative as accessible as possible should be considered and pursued with vigor.

7. A national “Depth of Book” data feed should be created to allay concerns about informational advantages

Renewed efforts should be made to broaden the availability and lower the price of depth-of-book market data to investors. Changes in market structure since decimalization have dramatically increased the need for this information. Investors and intermediaries often use exchange depth information to better understand the market-wide liquidity in the stocks they trade.

The process for acquiring and using this data is currently cumbersome and expensive, and can lead to the “rationing” of this important information. Market participants must compile this data from multiple exchanges across several data centers. This entails significant fixed costs even before any explicit exchange market data fees are paid, with total costs for retail firms of upwards of \$1 million or more per month. This leads to such information being restricted to investors, creating the perception of “haves” and “have nots”. Rightly or wrongly, the mere existence of such a perception dictates the need to provide more efficient ways of getting depth quote and trade data to more investors.

A potential solution, recently discussed in a research paper authored by the research firm the TABB Group, is to create a nation-wide depth-of-book data feed through the existing infrastructure that exists for top-of-book data. Doing so would eliminate significant costs and produce material market efficiencies. Market participants are already connected to this infrastructure for the receipt of market data, and can leverage existing connectivity and infrastructure to receive depth data should they so choose. Some investment in the existing network may be required, and governance safeguards may be necessary to ensure appropriate service levels and fees. These measures, however, can be effected at a cost that is insignificant when measured against the potential savings to the entire industry and the improved perception of equal information. Retail investors would no longer have, as one commentator once put it, “little choice... to obtain multiple proprietary exchange feeds – or [have] a view of the market that is increasingly incomplete.” It would be good for business and good for confidence at the same time.

8. The Consolidated Audit Trail should be approved, built and funded

People have confidence when they believe the “cops on the beat” have the tools they need to do their job, and the stock market is no different. While had to prove, it is easy to state that the technology and diversification of modern markets make it impossible for regulators to deter, detect and punish inappropriate conduct. For the average investor, it is all too easy to think “if the experts don’t understand what’s going on, how can I?” Clearly demonstrating that regulators have appropriate information is thus essential to making sure that investors remain confident in how are markets our working.

Direct Edge urges prompt SEC approval of the proposal to create a consolidated audit trail (“CAT”) as a means not only to detect inappropriate activity, but to serve as the “gold standard” for regulators, academics, exchanges and others to truly understand how our markets are operating. Once approved, the process for creating the CAT should be one of maximum transparency, inclusive input and access and the funding to match the importance of its role in improving investor confidence. Building the CAT the right way will take some time, but if market participants feel they have a voice and a role in the process, patience will be rewarded with a system built the right way the first time. And most importantly, no matter how many “bad guys” are truly out there, it will give investors comfort that the regulators are one step ahead of them.

9. The securities industry needs to better educate the investing public as to how modern markets operate to their benefit

At times it seems like no industry likes to scare customers away like the securities industry. Many business models appear to have as a core sales tactic the argument that every market participant is looking to take advantage of long-term investors. Like when your plumber tells you that every other plumber (except him, of course) is out to rip you off. It is hard for investors to have confidence in markets when the overwhelming volume of “analysis” tells you to run for the hills.

Exchanges and other industry-wide organizations need to make significant investment in basic investor education and communication to counter these allegations with facts and supporting information, so even competing market participants feel like partners in demonstrating that our nation's stock market is the best in the world. Direct Edge stands ready to contribute its time, talent and treasure to industry-wide, market-neutral efforts to give investors a real-world, plain-English way of understanding how stocks trade, how technology is used for their benefit, and providing answers as needed to "what happened?" when difficulties occur.

Conclusion

It is easy to talk about the lack of investor confidence in the abstract, but it has enormous financial consequences for American investors. Investors who move money from stocks to "less risky" assets risk low rates of return and less transparent fees that could severely hinder their ability to retire, pay for college, and achieve other financial goals. Some things that impact investor confidence we can't control for – such as where asset prices will head over time. But other confidence-building measures are well within our reach. The time to act is now.

This statement of principles is only part of Direct Edge's efforts to drive the market structure debate in a healthy and productive direction. We will continue to engage in partnered dialogue with our Members and evidence-based discussions with policy-makers, regulators and other thought leaders, and will offer comments and suggested policies in an appropriate and constructive manner. We look forward to a level of communication that will enhance our perspective, improve our markets and help restore investor confidence.

**Testimony of
Cameron Smith**

**Before the
House Financial Services Subcommittee on
Capital Markets and Government Sponsored Enterprises**

**“Market Structure: Ensuring Orderly, Efficient, Innovative and
Competitive Markets for Issuers and Investors”**

**President
Quantlab Financial
Houston, Texas**

June 20, 2012

*Testimony of Cameron Smith
President, Quantlab Financial
Houston, Texas*

*Before the
House Financial Services Subcommittee on
Capital Markets and Government Sponsored Enterprises*

*“Market Structure: Ensuring Orderly, Efficient, Innovative and
Competitive Markets for Issuers and Investors”*

June 20, 2012

Introduction

Thank you Chairman Garrett, Ranking Member Waters, and Members of the Subcommittee for providing me this opportunity to participate in today’s hearing. My name is Cameron Smith. I am President of Quantlab Financial, a Houston, Texas-based quantitative trading firm.

Quantlab was founded in 1998 and now employs more than 100 people. Our company does business in multiple markets around the world – not just in equities – but other asset classes such as futures, options, treasuries and foreign currencies. In addition, I have worked at the Securities Exchange Commission (SEC), an exchange, and a broker that serves institutions before arriving at Quantlab five years ago.

I am proud of the role Quantlab plays in the market and how our trading activities, in competition with other likeminded firms, lead to better prices for investors. The fact that a relatively small firm from Houston, Texas, is represented here today underscores the truly competitive, fair, and transparent nature of our equity markets.

Mr. Chairman, we trust and hope that this hearing reflects a commitment by all concerned with the quality of our financial markets to a comprehensive assessment of the strengths and weaknesses of our markets.

Modern Electronic Markets and Automated Trading Have Benefited U.S. Investors

In recent years, computer technology advancements have shifted the marketplace from an exclusive market, centered around the privileged few with seats on an exchange floor to an open, competitive electronic environment where orders are routed to exchanges and prices are communicated to the public in real-time through tele-communication lines. Virtually all trading is automated in some fashion. The result of these advancements is that professional trading can take place nearly anywhere in the country and across the globe.

Along with the technological advances, the updating of regulations over the last fifteen years has helped promote transparency and fair competition, leveling the playing field for all market participants.

As these changes have dramatically increased the efficiency of the markets, the role of traditional manual market making and specialist firms has been reduced and replaced by today's automated professional trading intermediaries. Many are calling these newer market participants "high frequency traders" or "HFTs." That is a vague label that means different things to many different people.

By whatever name, however, the market needs professional intermediaries to bridge gaps in supply and demand between investors. Historically, this function was provided by privileged intermediaries known as specialists, market makers, dealers, floor traders, or locals. Today, this function is provided by diverse, highly competitive firms that rely on technology.

It is this intense competition that has played a prominent role in reducing transaction costs for all investors, both retail and institutional. By virtually every common measure of market quality, our markets have never been healthier. This has been demonstrated in numerous empirical academic studies that show that transaction costs have come down dramatically, price discovery has improved, and short-term volatility has been reduced. I have attached a copy of a recent review of the academic literature on the topic for the record (Appendix A). The intensely competitive market is also why the U.S. equity market is the largest and most efficient equity market in the world.

While the general trend of improving market quality is clear, there still remains a great deal of misunderstanding around the role of professional trading, and so-called high frequency trading in particular. While different firms will describe their trading approach in different ways, high frequency traders generally collect and analyze publicly available data, and determine their view of the instantaneous "fair value" of whatever they are trading. Different traders use their view of fair value in different ways and at different times. Some make markets by posting prices around their idea of fair value. Others will wait until their idea of fair value allows them to trade immediately based on prices in the market. Regardless of their approach, the fierce competition between scores of professional intermediaries provides investors with the ability to buy or sell with low transaction costs. It is no coincidence that investor transaction costs dropped during the recent period of increasing competition and automation.

Further, the general approach of competitive traders identifying and trading towards fair value explains why studies that have compared high frequency trading to the rest of the market find that it tends to improve price discovery and lower, not increase, short term volatility in the market. Recently, in a working paper titled "High Frequency Trading and Price Discovery," Professor Terrence Hendershott at the University of California-Berkeley and Professor Ryan Riordan at the Karlsruhe Institute of Technology in Germany concluded that traders "play a positive role in price efficiency by trading in the direction of permanent price changes and in the opposite direction of transitory pricing errors on average days and the highest volatility days."

In sum, regulatory changes and technology advancements have led to a higher quality market that has benefitted all classes of investors, including retail and institutional, in the form of lower transaction costs, dampened volatility, and prices that better reflect all information.

Additional Reforms Have Potential to Further Improve Market Quality

While market quality has improved and investors have benefitted over the past decade or so, there are aspects of the market that might benefit from certain regulatory initiatives.

One policy that must be implemented in the short term is a reporting regime that ensures that regulators have access to all the data they need to adequately surveil our markets and continue to ensure they operate with the highest integrity. In this regard, we have consistently supported initiatives such as consolidated audit trails and the large trader reporting system. Further, we have encouraged the formation of industry working groups to offer technical assistance to regulators that must learn to analyze the richness of data that exists in electronic audit trails.

As regulators develop more robust market surveillance tools, however, it would be a mistake to focus attention solely on one group of market participants, as now seems to be the case with efforts by some to define “high frequency trading.” Instead, the programs should surveil the activities of all market participants, and then focus on specific unusual activity, regardless of their perceived strategy or use of automation.

A second area for improvement is one that the SEC is already in the process of addressing. Those are the related areas of risk management and circuit breakers or limit up/limit down protections. Many of the concerns expressed by critics of automated trading are really concerns, not about a specific trading style, but related to the threat of computer errors that undermine market integrity. While automation has improved market quality dramatically, there is no question we must vigilantly protect against its unique risks. Effective risk management by broker dealers, coupled with another line of defense at the exchanges through circuit breakers or limit up/limit down protections, are important to protect our markets from the effects of computer errors, software bugs or unintended interactions. The SEC’s proposals in these areas are right on the mark and should greatly reduce the potential impacts of errors while preserving the tremendous benefits of automation for investors.

A third area that policymakers must continue to monitor and perhaps make some incremental changes involves the issue of fragmentation. This is a longstanding issue in the world of U.S. equity market structure. The challenge has long been to balance the benefits of competition against complexities from fragmenting the market between too many trading venues.

The best price discovery occurs when orders from market participants with different objectives, time horizons, and perspectives interact in open and transparent markets. It is worthwhile to explore whether, for example, different types of order flow being executed away from the public, transparent markets, such as in dark pools or in other order flow arrangements, could lead to a degradation of market quality. We must, therefore, ensure that the current regulations don’t inadvertently contribute to fragmentation by hindering the ability of public markets to compete with private markets.

In this regard, two adjustments to the current regulatory scheme are worth considering. First, consider allowing “locked” markets – that is, permitting quotes to be displayed when the “bid” price and the “ask” price are the same. While Regulation NMS banned locked markets, one impact of the ban is to widen the quoted spread of the public market, thereby facilitating internalization and dark pool activity.

Second, policymakers should create categories of stocks with different quote increments. While decimalization and penny increments have saved investors hundreds of billions dollars, a one size fits all approach regardless of whether a stock trades at \$5 or \$500 does not make sense. Increments that are too wide reduce the efficiency of the public exchange markets relative to the private markets. For example, when Citigroup stock was trading under \$5 per share, just that one stock constituted more than 30 percent of the off private market volume. When the public markets cannot arrive at efficient prices due to tick increment constraints, it is relatively easier for off-exchange venues to siphon away order flow, contributing to fragmentation.

My final suggestion involves improving our overall approach to how we monitor and evaluate market performance. Specifically, I believe it is imperative for the equity market community to develop commonly accepted measures of market quality that are monitored consistently over time and provide a common-ground for market structure discussions. Our capital markets are far too important to allow policymaking decisions to be driven by opinion and anecdote as to the current state of our markets. Certainly, discussions about market structure, including high frequency trading, could benefit from rigorous statistical analysis and greater awareness of empirical evidence on the topic. There are already many established metrics and methodologies for examining market quality, including measures of liquidity, price efficiency, market impact, volatility and cost. It should be a priority of the policymakers to develop and specify the proper metrics before taking any significant steps toward altering the current market structure that has generally served investors well.

Conclusion

In summary, I congratulate the Subcommittee for holding this hearing and fostering discussion as to the health of our equity markets. Despite a lot of criticism from some sectors, we must not lose sight of the fact that we do have the world's leading equity market and that the empirical evidence shows they have never been healthier. The U.S. has achieved this position by adhering to certain core values: transparency, open competition and the best interests of the investing public. Accordingly, when considering any future actions we must tread carefully and make sure that any actions are consistent with these values. This can be done by ensuring that any policy decisions are firmly grounded in empirically driven understanding of the markets. While there are areas in need of improvement, we have a lot to be proud of.

I thank you for the opportunity to appear today. I look forward to answering any questions.

Appendix A:
Literature Review

**High Frequency Trading Literature Review
June 2012**

This brief literature review presents a summary of recent empirical studies related to automated or “high frequency trading” (HFT) and its impact on various markets. Each study takes a unique approach, yet all paint a consistent picture of markets being improved by competition and automation.

Author(s) / Title	Dataset	Findings
Angel, Harris, Spatt “Equity trading in the 21st century”, February 2010	U.S. equities, 1993 – 2009	Trading costs have declined, bid-ask spreads have narrowed and available liquidity has increased
RGM Advisors “Market Efficiency and Microstructure Evolution in US Equity Markets: A High Frequency Perspective”, October 2010 March 2012 (Update)	U.S. equities, 2006-2011	Bid-ask spreads have narrowed, available liquidity has increased and price efficiency has improved
Credit Suisse “Sizing Up US Equity Microstructure”, April 2010 “Who Let the Bots Out? Market Quality in a High Frequency World”, March 2012	U.S. equities, 2003-2010 U.S. equities, 2004-2011	Bid-ask spreads have narrowed, available liquidity has increased and short-term volatility (normalized by longer term volatility) has declined, and the incidence of “mini” crashes has not increased
Hasbrouck, Saar “Low-Latency Trading”, May 2011	U.S. equities, full NASDAQ order book June 2007 and October 2008	Low latency automated trading was associated with lower quoted and effective spreads, lower volatility and greater liquidity
Hendershott, Riordan “Algorithmic Trading and Information”, August 2009	Automated vs. other trades. Deutsche Börse equities, January 2008	Automated trades made prices more efficient and did not contribute to higher volatility
Chaboud, Hjalmarsson, Vega and Chiquoine “Rise of the Machines: Algorithmic Trading in the Foreign Exchange Market”, October 2009	Automated vs. other trades. EBS forex market, 2006-2007	Automated trades increased liquidity and may have lowered volatility
Markets Committee, Bank for International Settlements (BIS) “High-frequency trading in the foreign exchange market”, September 2011	Various FX venues, notably Reuters and EBS, and various dates, notably May 6, 2010 and March 17, 2011	HFT is found to be beneficial during normal market periods, with similar behavior to traditional market participants during high volatility periods

Brogaard "High frequency trading and its impact on market quality", August 2010	HFT vs. other trades. U.S. equities on NASDAQ and BATS, various periods in 2008 – 2010	HFT helped to narrow bid-ask spreads, improved price discovery and may have reduced volatility
Brogaard "High Frequency Trading and Volatility", October 2011	HFT vs. other trades. U.S. equities on NASDAQ and BATS, various periods in 2008 – 2010	HFT activity tends to decrease idiosyncratic and intraday volatility.
Hendershott, Riordan "High Frequency Trading and Price Discovery" (working paper)	HFT vs. other trades. U.S. equities on NASDAQ, various periods in 2008 – 2010	HFT trades were positively correlated with permanent price changes and negatively correlated with transitory price changes, suggesting that HFT improves price discovery
Hirschey, Nicholas "Do High-Frequency Traders Anticipate Buying and Selling Pressure?"	HFT vs. other trades. U.S. equities on NASDAQ and BATS, various periods in 2008 – 2010	HFT trades were positively correlated with non-HFT trading, corroborating Hendershott and Riordan results
O'Hara, Yao, Ye "What's Not There: The Odd-Lot Bias in TAQ Data"	HFT vs. other trades. U.S. equities on NASDAQ, various periods in 2008 – 2010	Odd-lots and trades of 100 shares drive the majority of price discovery; HFT is more likely to trade with odd-lots
Jarnecic, Snape "An analysis of trades by high frequency participants on the London Stock Exchange", June 2010	HFT vs. other trades. LSE equities, April – June, 2009	HFT improved liquidity and was unlikely to have increased volatility
CME Group "Algorithmic trading and market dynamics", July 2010	Automated vs. other trades. CME futures, May 2008 – May 2010	Automated trading was associated with improved liquidity and reduced volatility
Kirilenko, Kyle, Samadi and Tuzun "The Flash Crash: The Impact of High Frequency Trading on an Electronic Market", May 2011	CME ES S&P-500 equities index futures contract, May 3 - May 6, 2010	HFT traders did not change their behavior during the flash crash; HFT was net buyer during the crash, net seller during the recovery; HFT trading may have induced more trading during the crash
Eurex AG, "Why high-frequency trading is a good thing", 2011	Eurex FDAX: DAX equities index futures contract August 25, 2011	During "FDAX flash crash", HFT acted "in a way that protects the market by placing a rapid succession of small, non-directional buy and sell orders, thus preventing abrupt price movements", improving market quality during a period of high stress
Menkveld "High Frequency Trading and the New-Market Makers", April 2011	Dutch equities traded on Chi-X and Euronext, 2007	A single high frequency trader played an important role in the development of a competitive market center, resulting in better liquidity and lower trading costs

Lepone "The Impact of High Frequency Trading (HFT): International Evidence", September 2011	HFT vs. other trades. Singapore Exchange (SGX), Australia Securities Exchange (ASX), NASDAQ and London Stock Exchange	HFT has become a major provider of liquidity, particularly during periods of market uncertainty
Hendershott, Jones, Menkveld "Does Algorithmic Trading Improve Liquidity?", February 2011	Automated quoting facility, NYSE equities, 2003	Automated trading narrowed bid-ask spreads, lowered trading costs, and improved price efficiency
Riordan, Storkenmair "Latency, Liquidity and Price Discovery", 2009	Xetra high-speed trading system, Deutsche Börse, 2007	Higher system speeds led to increased liquidity and improved price discovery
Hendershott, Moulton "Automation, Speed and Stock Market Quality: The NYSE's Hybrid", February 2010	NYSE TAQ database plus others, June 1, 2006 - May 31, 2007	Introduction of automation via the NYSE hybrid system improved price discovery and made prices more efficient
Gomher, Arndt, Lutat, Uhle "High-Frequency Trading", March 2011	Various	Survey paper that highlights beneficial aspects of HFT, while noting that perceived problems are largely a result of U.S. market structure
Various BIS Foresight Project	Various European equities data sets	Generally stable or improving market quality over the past decade

This following studies measured improvements in overall market quality:

Angel, Harris and Spatt (February 2010) examined many measures of market quality and how they have changed over time and in response to regulatory and structural changes in the U.S. equity markets.¹ Drawing from a diverse set of data sources, they show that there has been significant improvement in virtually all aspects of market quality. They stated that "execution speeds have fallen, which greatly facilitates monitoring execution quality by retail investors. Retail commissions have fallen substantially and continue to fall. Bid-ask spreads have fallen substantially and remain low, although they spiked upward during the financial crisis as volatility increased. Market depth has marched steadily upward. Studies of institutional transactions costs continue to find U.S. costs among the lowest in the world."

¹ Angel, J., Harris, L. and Spatt, C., "Equity trading in the 21st century", http://papers.ssrn.com/so13/papers.cfm?abstract_id=1584026

RGM Advisors, LLC (October 2010, Updated March 2012) studied recent data from the U.S. equity markets.² The authors examined trends in a number of U.S. equity market quality metrics over the period from January 2006 through June 2010 and how these metrics differed by market capitalization and by listing venue. They presented data that confirmed that over this period quoted bid-ask spreads declined, quoted market depth increased and short-term measures of market efficiency significantly improved. The updated Research Note examined the same metrics through the end of 2011, a period that included significant macro-volatility surrounding the European debt crisis and U.S. credit downgrade. The data demonstrated that trends toward improving market quality continued in recent periods, despite the macro-economic shocks.

Credit Suisse (April 2010, March 2012) released a report on related topics and showed that in recent years, bid-ask spreads declined, depth at the inside quote increased and intra-day volatility normalized by longer-term volatility declined substantially.³ The authors concluded on this last point that “[t]his seems to be confirmation that the new market participants are successfully finding and removing mispricings, as well as dampening volatility that might otherwise be created by large institutional orders filled during the day.” Credit Suisse (March 2012) released a follow-up report on the impact of HFT on market quality and found that bid-ask spreads declined and depth at the inside quote increased. They also looked at historical long-term and short-term (intraday) volatility and found that long-term volatility has remained within historical norms while short-term volatility has declined over recent years. They concluded that, with regard to high frequency traders, “markets are not worse for their presence”.

Hasbrouck and Saar (October 2010) explored the nature and impact of low-latency (algorithmic) trading on the NASDAQ exchange during June 2007, a 'nominal' market period, and October 2008, a volatile, uncertain period.⁴ They identified periods of high market activity due to algorithms and relate these to longer-term market quality metrics such as spread, effective spread and depth of liquidity. They observe in both periods “that higher low-latency activity implies lower posted and effective spreads, greater depth, and lower short-term volatility.”

² Castura, J., Litzenberger, R., Gorelick, R., and Dwivedi, Y., 2010: “Market Efficiency and Microstructure Evolution in US Equity Markets: A High Frequency Perspective”, <http://www.rgmadvisors.com/docs/MarketEfficiencyStudyOct2010.pdf>

Castura, J., Litzenberger, R., Gorelick, R. 2012: “Market Efficiency and Microstructure Evolution in US Equity Markets: A High Frequency Perspective: Update March 2012”, <http://www.rgmadvisors.com/docs/MarketQualityStudyMarch2012.pdf>

³ Credit Suisse, 2010: “Sizing Up US Equity Microstructure”, <https://tradeview.csfb.com/edge/Public/Bulletin/Servefile.aspx?FileID=14377&m=1337434953>

Credit Suisse, 2012: “Who Let the Bots Out? Market Quality in a High Frequency World”, <https://edge.credit-suisse.com/edge/Public/Bulletin/Servefile.aspx?FileID=21352&m=2100222725>

⁴ Hasbrouck, J. and Saar, G., “Low-Latency Trading”, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1695460

The following studies examined market data sets that distinguished between automated trades and other trades:

Hendershott and Riordan (August 2009) reported on the impact of automated trading on the Deutsche Börse's Xetra market, an equity market where automated trading activity could be distinguished.⁵ The paper found that automated trading accounted for about half of the total volume in the top 30 volume stocks, and that automated trading was better than non-automated trading at driving prices toward efficiency. The authors also showed that automated trading "contributes more to the discovery of the efficient price than human trading." Furthermore, they find there is "no evidence of [automated trading] behavior that would contribute to volatility beyond making prices more efficient."

Similarly, in the foreign exchange market, **Chaboud, Hjalmarsson, Vega and Chiquoine (October 2009)** used a dataset that separately identified computer generated trades from human generated trades and showed that an increase in automated trading may be associated with less market volatility, and that automated traders tend to increase liquidity provision after exogenous market events such as macroeconomic data announcements.⁶

The Bank for International Settlements (September 2011) released a related study on the impact that growing HFT participation has had on the foreign exchange market.⁷ The authors based their findings on observations made from several banks and other foreign exchange markets, in addition to using historical data from Reuters and EBS, two of the largest FX trading platforms. They cited a general consensus that HFT benefits the markets under normal conditions, and therefore focused on two significant FX shocks: May 6, 2010 and March 17, 2011. In both cases, they found evidence suggesting that HFT did not withdraw from trading during the shocks, and that they may have been quicker to resume normal trading as the shocks stabilized than traditional market participants.

Brogaard (August 2010) investigated the impact of "high frequency trading" or "HFT" on US equity trading on the NASDAQ and BATS exchanges.⁸ Using a data set provided by the exchanges that labeled all activity as either 'HFT' or 'everything else', Brogaard examined the exact impact that HFT participants have on the market. His analysis used a well-known regression framework to isolate various factors in the market and how HFT impacts each of these. In particular, he shows that HFT activity contributes more to price discovery than other activity, that HFT quotes are at the best bid or best ask price about 50% of the time, that HFT reduces price impact (an important component of trading costs) for other participants, and that HFT activity reduces volatility.

⁵ Hendershott, T. and Riordan, R., 2009: "Algorithmic Trading and Information", http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1472050

⁶ Chaboud, Alain, Hjalmarsson, Erik, Vega, Clara and Chiquoine, Ben, "Rise of the Machines: Algorithmic Trading in the Foreign Exchange Market" (October 2009). Federal Reserve Board International Finance Discussion Paper No. 980, <http://ssrn.com/abstract=1501135>

⁷ Bank for International Settlements, "High-frequency trading in the foreign exchange market" (September, 2011), <http://www.bis.org/publ/mktc05.pdf>

⁸ Brogaard, J., "High frequency trading and its impact on market quality", www.futuresindustry.org/ptg/downloads/HFT_Trading.pdf

Brogaard (October 2011) used the same data set to investigate the impact of HFT on volatility.⁹ He performed a series of measurements in an attempt to determine the causal nature of the relationship between HFT activity and volatility. He found evidence that HFT liquidity provision increases during times of short-term volatility, but decreases during periods of long-term volatility. Using the 2008 short-sale ban as an exogenous control variable of HFT activity levels, Brogaard found that restrictions that reduced HFT participation lead to higher volatility.

Hendershott and Riordan (2011) examined the impact of HFT on the price discovery process using the same NASDAQ dataset used in Brogaard (2010).¹⁰ Overall they found that HFT trades are positively correlated with permanent price changes and are negatively correlated with temporary pricing errors, thereby improving the price discovery process. By distinguishing trades initiated by HFT, the authors found that marketable high frequency trades actively drive prices towards fair value.

Hirschey (2011) used the same HFT-labeled NASDAQ dataset of Hendershott and Riordan (2011) to investigate how HFT used marketable orders.¹¹ He found that HFT traded with marketable orders in the direction of previous, contemporaneous and future non-HFT orders. This corroborates the Hendershott and Riordan results, showing that HFT trades in the direction of permanent price impact.

O'Hara, Yao and Ye (2011) used the same HFT-labeled dataset of Hendershott and Riordan (2011) to investigate the use of odd-lots in trading.¹² They found that that odd-lots contribute to 30% of the price discovery process, and that such trading can represent a significant fraction of all trades, particularly for higher priced stocks. They showed that HFT was more likely to trade with odd-lots. Finally, they raised the concern that the consolidated pricing feed does not account for odd-lots, and as such may not be as useful as it was intended.

A similar study done by **Jarnecic and Snape (June 2010)** used data provided by the London Stock Exchange (LSE).¹³ Like the NASDAQ data set, this set labeled all activity by participant type; HFT, investment bank, retail, etc., providing a finer granularity of participation rates and behaviors. The authors used a similar regression framework as Brogaard in order to isolate the impact of HFT on various market metrics. They found that HFT participants tend to provide liquidity when spreads are wide, demand liquidity when spreads are narrow, that they are more likely to "smooth out liquidity over time and are unlikely to exacerbate stock price volatility".

⁹ Brogaard, J., "High frequency trading and volatility", http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1641387

¹⁰ Hendershott, T. and Riordan, R., 2011: "High Frequency Trading and Price Discovery", <http://faculty.baas.berkeley.edu/hender/HFT-PD.pdf>

¹¹ Hirschey, N. "Do High-Frequency Traders Anticipate Buying and Selling Pressure?", https://www2.bc.edu/~taillard/Seminar_spring_2012_files/Hirschey.pdf

¹² O'Hara, M. Yao, C. and Ye, M. "What's not there: The odd-lot bias in TAQ data", http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1892972

¹³ Jarnecic, E. and Snape, M., "An analysis of trades by high frequency participants on the London Stock Exchange", http://mfs.rutgers.edu/MFC/MFC17/MS/MC10~447_Snape_Jarnecic.pdf

The CME Group (July 2010) released a report on automated trading activity on the CME futures exchange.¹⁴ They labeled all participants as either "ATS" (automated trading system) or "non-ATS." They compared trade volume and messaging rates for each participant against market measures such as liquidity and volatility. ATS's impact on these measures varies by futures contract, but as a whole, they concluded that ATS-based "volume and message traffic tend to be associated with enhanced liquidity and reduced volatility".

Kirilenko, Kyle, Samadi and Tuzun (May 2011) investigated the role that HFT played in the flash crash on May 6, 2010.¹⁵ With access to all trades and accounts for the S&P 500 e-mini futures contract that trades on the CME, they classified all participants by activity patterns, including a group of participants that they characterized as "HFT". They found that these participants accounted for a large portion of trading and that they did not change their trading behavior before or during the flash crash. HFT participants were net buyers during the crash and net sellers during the recovery. The authors suggest that HFT trading during a brief period of the crash may have induced other participants into thinking there was more liquidity than was truly available.

Backes (2011), representing the Eurex futures group, performed a similar investigation around the flash crash of the FDAX futures contract on August 25, 2011, which shared many characteristics of the May 6, 2010 flash crash in the U.S.¹⁶ Analysis of the trading behavior of HFT during this time found that HFT played an important role in maintaining and providing liquidity during the sharp drop in the FDAX contract. The author stated that HFT acted "in a way that protects the market by placing a rapid succession of small, non-directional buy and sell orders, thus preventing abrupt price movements".

Menkveld (April 2011) studied the development of the Chi-X European stock MTF in 2007 and the simultaneous entry of a large high frequency trading participant on Chi-X.¹⁷ He found that this new participant was largely responsible for the increase in market share of Chi-X and ultimately led to reduced spreads for the stocks that it traded.

Lepone (2011) summarized the results of a series of research conducted by the Australian organization Capital Markets Cooperative Research Centre (CMCRC).¹⁸ These papers examined the impact of HFT on market quality for exchanges based in Singapore, Australia, the U.S., and the United Kingdom. Their data allowed them to identify trading participants and classify them into HFT and non-HFT groups. Following a methodology similar to Brogaard (2010), each of these papers measured the impact of HFT on market quality metrics. The findings showed a consistent pattern of improved market quality coinciding with growing

¹⁴ The CME Group, "Algorithmic trading and market dynamics",
http://www.cmegroup.com/education/files/Algo_and_HFT_Trading_0610.pdf

¹⁵ Kirilenko et al., "The Flash Crash: The Impact of High Frequency Trading on an Electronic Market",
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1686004&rec=1&srcabs=2013789

¹⁶ Backes, "High-frequency trading in volatile markets - an examination",
http://www.eurexexchange.com/download/documents/publications/factsheet_highfrequency.pdf

¹⁷ Menkveld, A., 2011: "High Frequency Trading and the New-Market Makers",
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1722924

¹⁸ Lepone, A., 2011: "The Impact of High Frequency Trading (HFT): International Evidence",
<http://www.cmcrc.com>

HFT participation. They also demonstrated that HFT is active during all volatility conditions and “become the primary providers of liquidity” in periods of high uncertainty.

These event studies investigated the impact of improvements to a market center’s trading technology:

Hendershott, Jones and Menkveld (2007) examined the impact on the NYSE of their auto-quoting facility introduced in 2003.¹⁹ This study showed that for all stocks, and particularly large-cap stocks, automated trading increased liquidity. It also demonstrated that the increase in automated trading caused a reduction in effective spreads, thereby reducing costs to investors.

Similarly, **Riordan and Storkenmairm (2009)** reported on how a 2007 upgrade to the Deutsche Börse’s Xetra trading system focused solely on latency reduction, positively affected market quality.²⁰ After latency reductions in the exchange’s trading systems, liquidity increased across market capitalization and trade sizes, and adverse selection and permanent price impact were dramatically reduced.

Hendershott and Moulton (February 2010) studied the introduction of the NYSE hybrid system in 2006, which moved the NYSE to a faster and more automated matching system.²¹ They found that prices became more efficient due to faster price discovery and reduced noise in prices.

These papers provided an overview of “high frequency trading” and related market structure issues:

Gomber et al. (March 2011) presented background information on HFT. Their paper analyzed HFT and “certain proposed regulatory measures.”²² They claimed that HFT is a technology rather than a strategy, and is a natural evolution in the market place. They highlighted the beneficial aspects that HFT can provide, and noted that perceived problems with HFT are largely a result of U.S. market structure rather than anything inherent in HFT itself. They provided several recommendations for policy makers that would maintain the beneficial aspects of HFT while providing markets with additional safety.

¹⁹ Hendershott, T., Jones, C.M. and Menkveld, A.J., “Does Algorithmic Trading Improve Liquidity?”, *Journal of Finance*, Volume LXVI, No. 1, February 2011

²⁰ Riordan, R. and Storkenmairm, A., 2009: “Latency, Liquidity and Price Discovery”, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1247482

²¹ Hendershott, T. and Moulton, P., February 2010: “Automation, Speed, and Stock Market Quality: The NYSE’s Hybrid”, http://www.hotelschool.cornell.edu/research/facultybios/research-papers/documents/AutomationSpeedHybrid_accepted.pdf

²² Gomber, P., Arndt, B., Lutat, M., and Uhle, T., March 2011: “High-Frequency Trading”, <http://www.frankfurt-main-finance.com/en/data-facts/study/High-Frequency-Trading.pdf>

The **Foresight Project** by the BIS was a study intended to “explore how computer generated trading in financial markets might evolve in the next ten years or more”, with a particular emphasis on stability, integrity, competition, efficiency and costs.²³ Most of the supporting papers were policy driven and speculative in the sense that they were not data-driven. One paper examined the changes in broad market quality in U.K. equities over the past decade and found that there are few trends of statistical significance. Volatility appeared to have peaked in 2008/2009, but had no discernable long-term trend. Liquidity and efficiency metrics appeared to have no significant trends, and there may be a positive link between competition and market quality.

²³ BIS Foresight Project: <http://www.bis.gov.uk/foresight/our-work/projects/current-projects/computer-trading>



Written Testimony by

Jeffrey M. Solomon
Chief Executive Officer of Cowen and Company, LLC
Cowen Group, Inc.

House Committee on Financial Services
Subcommittee on Capital Markets and Government Sponsored Enterprises

*Hearing entitled "Market Structure: Ensuring Orderly, Efficient,
Innovative and Competitive Markets for Issuers and Investors"*

Wednesday, June 20, 2012

Contact: jeffrey.m.solomon@cowen.com
Website: www.cowen.com

Thank you for inviting me to speak with you today regarding market structure and fostering innovative and competitive capital markets in the United States. My name is Jeff Solomon and I am the Chief Executive Officer of Cowen and Company, an emerging growth investment bank focused on servicing growth-oriented companies in sectors such as healthcare, technology, telecommunications, media, aerospace and defense, and retail.

Our clients represent some of the brightest and most motivated entrepreneurs in the country. They are actively seeking to develop products and services that can change, enhance or positively disrupt whole sections of our economy and, while they deploy their vision, in more cases than not, they are significant creators of long-term private sector jobs. In order to continue to grow their companies, these visionaries need access to the capital formation provided by the equity markets.

I am very proud of the growth our country has achieved by fostering the greatest capital markets structure the world has ever seen over the past century. To be fair, the system isn't always perfect and I fully support regulation to ensure the system functions properly. Market oversight is a significant task and I know this committee, the SEC and other oversight bodies have been working diligently to address a multitude of issues. But I do believe that we need to be extremely careful to examine how regulations imposed over the past decade have adversely impacted the equity markets and damaged capital formation at the very time it is most needed.

The last decade has shown a significant decrease in the trading liquidity for most small cap issuers. At the same time, retail investors are less relevant than institutional investors in individual stocks as evidenced by the popularity of mutual funds and Exchange Traded Funds, who are now the dominant market participants. A lack of liquidity in any small cap stock makes it difficult for investors to accumulate a position. Moreover, portfolio managers carefully assess liquidity when determining position size and price as they know it may be hard to get out of the stock when their price targets are reached or should they need to sell to generate liquidity to meet investor redemptions. This dynamic has severely narrowed the investor universe for small cap companies thereby making it difficult for them to raise capital to expand. Indeed the number of IPOs raising less than \$60 million has fallen precipitously over the past decade.

One of the principal reasons for the lack of liquidity in small cap stocks can be directly attributed to the advent of decimalization, meaning trading in penny increments. As a direct result of reduced trading spreads, professional market makers and specialists, whose job was to provide liquidity for their clientele, were forced to overhaul, sell or dissolve their businesses to contend with much

lower revenues. This, in turn, gave rise to two market forces affecting market structure - electronic trading and reduced research coverage of small cap stocks.

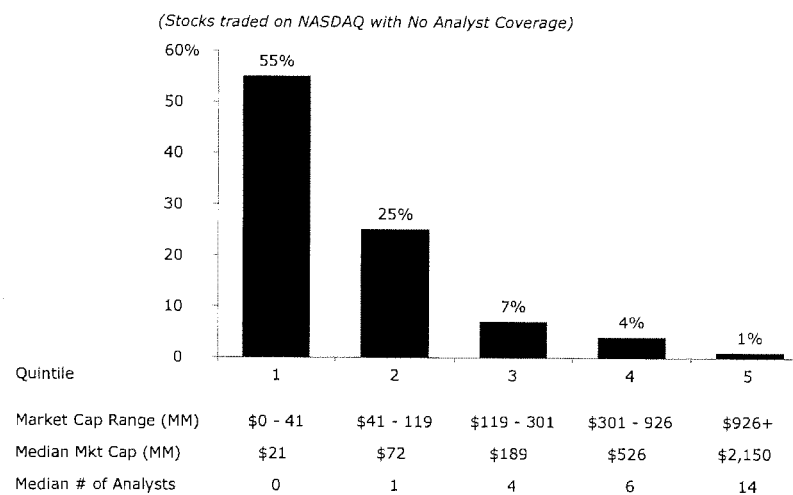
The following pages and figures are provided as detailed information to support my oral testimony and are intended to highlight some key trends taking place with regard to market structure in the U.S., including:

- The undercoverage of small cap stocks by sell-side research analysts;
- The decline in "Small IPOs", or IPO transactions raising \$60 million in proceeds or less;
- The decline in companies listed on U.S. exchanges and U.S. exchanges' global competitiveness; and
- The relationship between employment and IPO activity.

We have the opportunity to re-examine current market trading structures to further support the positive initiatives created in the JOBS Act. By pursuing modifications to existing legislation and regulations around decimalization that bring back market makers for small cap stocks, Congress and the regulators will be telling Wall Street executives how they can allocate their resources to profitably meet the needs of their clients while fostering job growth in America. We can still be the leader in funding successful innovation in the U.S. But in order to thrive once again, we must make it more economically viable for small companies to access the capital markets to fund their growth, create new industries and provide Americans with the job growth from the private sector we so dearly want.

I. Sell-Side Research Coverage of Small-Cap Companies

Reduced trading spreads forced professional market makers and specialists, whose job was to provide liquidity for their clientele, to overhaul, sell or dissolve their businesses to contend with much lower revenues. This, in turn, gave rise to two market forces affecting market structure - electronic trading and reduced research coverage of small cap stocks. In regards to the latter, a significant portion of small cap stocks today are either undercovered by sell-side analysts or not covered at all. The chart below shows research coverage by market capitalization for companies traded on NASDAQ.



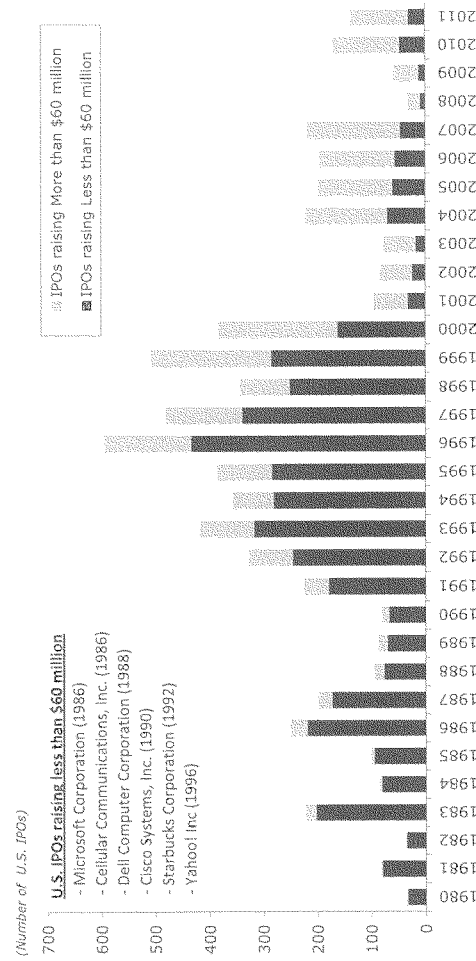
Source: Keating Investments. "The JOBS Act: Shifting Into Gear and Accelerating Up the IPO On-Ramp" by Timothy J. Keating, May 2012.
Note: Information as of December 31, 2011.

II. Decline in “Small IPOs” on U.S. Exchanges

Over the past fifteen years, there has been a dramatic decline in “Small IPOs”, or IPO transactions raising less than \$60 million in proceeds, in the U.S. From 1980 to 2000, these transactions accounted for 74% of total U.S. IPO activity and included financings for many technology sector pioneers like Microsoft and Cisco. Over the past five years, these transactions accounted for only 24% of U.S. IPO activity.

To give you an example, I would like to turn back to 1986 when a company called Cellular Communications, Inc. was going public. Cellular Communications, Inc. was a company with a strong belief that cellular technology would grow and provide a better way for people to connect and communicate with one another. This was far from mainstream thinking at the time. Founded by my friend and now colleague, George Blumenthal of Cleveland Ohio, Cellular Communications Inc. needed capital in order to stay afloat and explore growth. Through their IPO, the company raised only \$25 million. But over the years, Cellular Communications, Inc. grew as a public company with the explosion in the use of cellular technology and created a number of jobs along the way. They funded their growth primarily by way of the public equity markets with clear support from market makers and research firms that helped them tell their story to investors. Today, no firm will do a \$25 million IPO as it will likely only lead to another illiquid small cap stock.

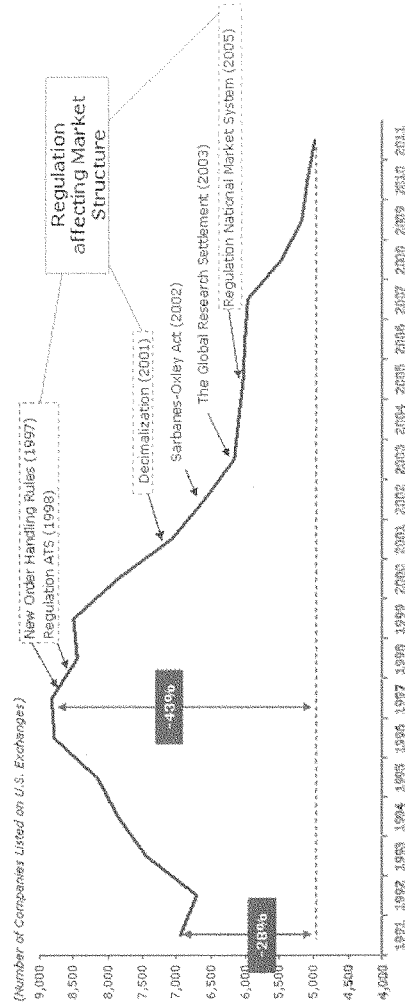
The chart on the following page shows U.S. IPO activity over the past three decades and the significant decline that has occurred in “Small IPOs”.



Source: Thomson Reuters SDC Platinum and Grant Thornton.
IPO data excludes REITs, closed-end funds, SPACs/blank check companies and LPs. Excludes transactions with proceeds less than \$5 million.

III. The Decline in Companies Listed on U.S. Exchanges

Over the past twenty years, the number of companies listed on U.S.-based exchanges has declined by 28%. Compared to its peak in the late 1990s, listings are down by over 40%. This trend has corresponded with a period of increased financial markets regulation, including certain regulations affecting market structure.



Source: World Federation of Exchanges. "A Wake-Up Call for America" by David Weid and Edward Kim, November 2009.

IV. Number of Companies Listed by Exchange Country

While the United States' exchanges have lost nearly 30% of its listings over the past twenty years, exchanges across the rest of the world have seen a steady increase in listing activity. This is the case for both exchanges located in emerging markets, such as Hong Kong, as well as exchanges located in more developed regions, including London and Tokyo.

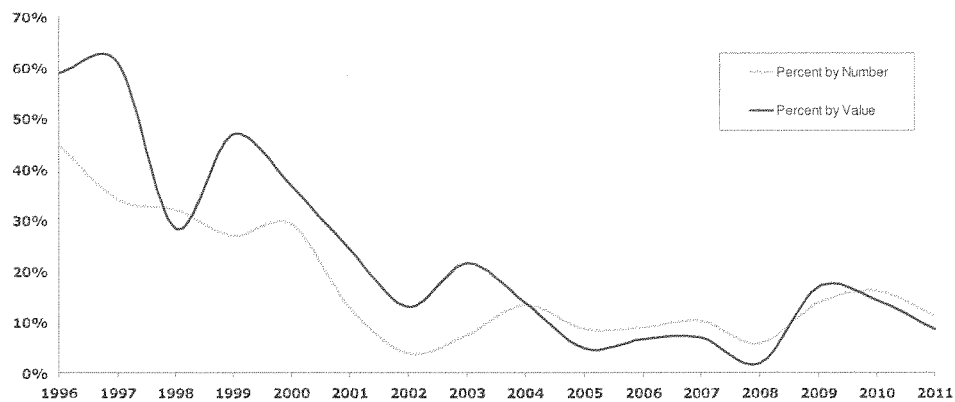
	Number of Listings		% Change	Number of Listings		% Change
	1991	2011		1997	2011	
United States	6,943	4,988	(28%)	8,823	4,988	(43%)
Australia	1,005	2,079	107%	1,219	2,079	71%
Borsa Italiana	267	328	23%	239	328	37%
Deutsche Börse	NA	746	NA	613	746	22%
Hong Kong	299	1,413	373%	583	1,413	142%
London	2,572	2,886	12%	2,513	2,886	15%
Tokyo	1,764	2,291	30%	1,865	2,291	23%

Source: World Federation of Exchanges. "A Wake-Up Call for America" by David Weild and Edward Kim, November 2009.

V. The U.S.'s share of Global IPOs

The U.S.'s share of Global IPOs, or IPOs completed by foreign companies outside their home country, has decreased dramatically over the past fifteen years. In 2011, 22 foreign issuers listed on U.S. exchanges, representing 11% of total Global IPOs. Fifteen years ago, the U.S. captured a 45% share of these listings.

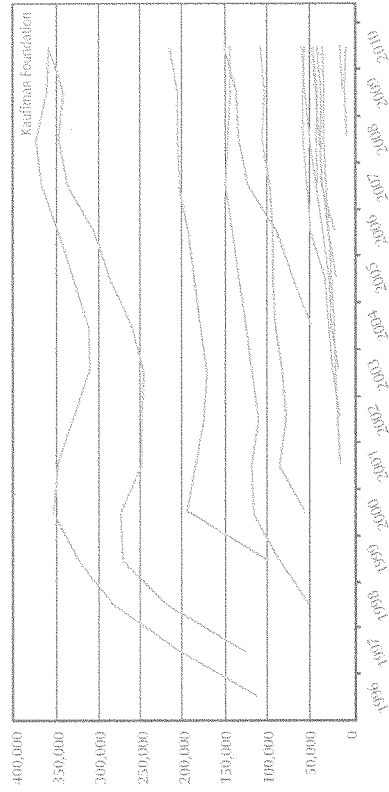
(U.S.'s share of Global IPOs)



Source: Committee on Capital Markets Regulation. Dealogic.

VI. Growth Company IPOs and Employment Growth

Growth companies are actively seeking to develop products and services that can change, enhance or positively disrupt whole sections of our economy and, while they deploy their vision, in more cases than not, they are significant creators of long-term private sector jobs. The figure below shows cumulative employment at the time of IPO and post-IPO across all growth companies that underwent IPOs in the U.S. for each year during the fifteen year period ended 2010.

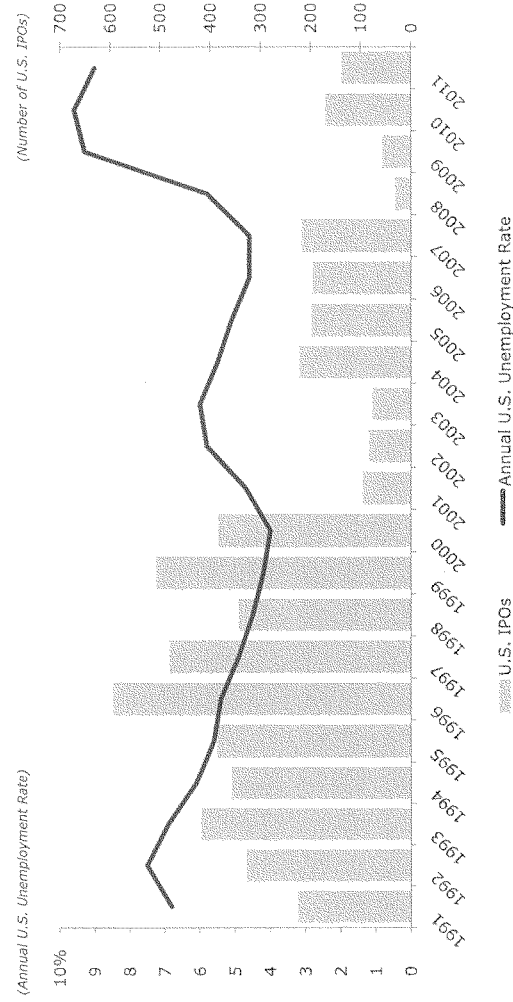


Source: The Kauffman Foundation.

Note: Growth companies, defined as domestic operating companies less than 30 years old that are not spinoffs, rollups, buyouts or demutualizations, account for 1,700 of the 2,766 companies that went public during the study period.

VII. A Depressed IPO Market Contributes to Increased Unemployment

Emerging growth companies are important job creators in our economy. Historically, U.S. unemployment has risen during periods coinciding with depressed IPO markets.



Source: Thomson Reuters SDC Platinum, Grant Thornton and U.S. Department of Labor.
IPO data excludes REITs, closed-end funds, SPACs/blank check companies and LPs. Excludes transactions with proceeds less than \$5 million.

**Testimony of
Jim Toes
President and CEO
Security Traders Association**

**Before the Capital Markets and Government Sponsored Enterprises Subcommittee
Committee on Financial Services
U.S. House of Representatives**

June 20, 2012

Chairman Garrett, Ranking Member Waters and Members of the Subcommittee:

The Security Traders Association (STA) welcomes the opportunity to present comments before the Subcommittee on Capital Markets and Government Sponsored Enterprises on: "Market Structure: Ensuring Orderly, Efficient, Innovative and Competitive Markets for Issuers and Investors".

The STA was formed in 1934. We are an organization of individuals who are involved in the trading of financial securities. Our membership is diverse, both geographically and in the roles we fulfill in the market place. Much of our testimony today will reference years of comment letters STA has written on market structure; letters which were the culmination of input received from a wide range of market participants. The testimony of the STA over the years has accurately informed and alerted Congress and the Securities and Exchange Commission (SEC) to the possible consequences, both intended and unintended, of proposed changes to market structure. We are pleased to have the opportunity to do so today.

Our testimony will focus on three areas of concern STA has with today's market structure: investor confidence; capital formation; and the quality of regulation. We will also identify specific areas which we, as practitioners, view are the primary forces causing our concerns: operational capability; decimalization; and the rule making process for both Self-Regulatory Organizations (SROs) and the SEC.

Investor Confidence; Operational Capability

Investor confidence is influenced by several factors, none more than the operational capability of the markets. Failures of that capability, even as a rare or limited occurrence, destroy investor confidence, much more so than any other regulatory or market structure minutia. Fostering greater operational capability should be the foremost consideration of any regulatory or legislative entity that has oversight or influence on our financial markets. It is imperative that such entities ensure no demands are made on the operational capacity of the industry that result in its being unable to deliver the services it purports to offer. Furthermore, behavior which stresses the operational capability of our markets should be identified and reviewed by the proper regulatory agency. Our markets need to be open to serve a wide range of market participants with varying business models. Therefore, it is critical that behavior which is deemed potentially harmful to the overall operational capability of our markets not be allowed to exist unimpeded.

Quality of Regulation and the Rulemaking Process for SROs and SEC

Today, rules governing the securities markets are introduced to the marketplace by SEC initiatives in the form of rule proposals, or the rule filings of the Self-Regulatory Organizations submitted to the SEC for approval. SEC approval of SRO rules, and SRO rules in certain cases that are effective upon filing, presents unique problems. While there are similarities in these processes, they are distinct and vary primarily in the level of due diligence required of the Commission. There are efficiencies within both processes that when applied properly serve the

competitive nature of our markets and investor confidence. Our concerns reside in the lack of criteria that are used in deciding which process better serves investor confidence when rules are proposed.

As stated in our letter to the Commission on June 8, 2012:

STA acknowledges that the right of exchanges to compete is often exercised through the SRO rule filing process. While STA sees certain efficiencies and benefits which accrue to investors in this process, we have become concerned that the pattern of one SRO rule approval is often followed by similar, but different Rule filings by competing SROs. This trend has the potential to affect overall market structure and investor confidence. We strongly urge the Commission that when considering the impact to market structure with a single SRO Rule Proposal, it does so under the assumption that competing SROs will file similar proposals.

The Commission should consider alternative approaches to the approval of important SRO rule proposals that have material market-wide implications on the structure of the market. Rather than picking and choosing between the proposals or in the alternative, approving all of them, in cases where multiple rule filings are made that are identical or very closely related or where the SRO rule filings have material market-wide implications, the Commission should consider substituting a proposal for a uniform, market-wide SEC rule in lieu of those of the SROs. STA does not suggest that changes to fee structures or other SRO proposals that attempt to differentiate themselves would merit a uniform SEC approach. Instead, the Commission should propose uniform, market-wide rules when there are significant market-wide implications.

For example, the NYSE Retail Liquidity Program (RLP) proposal would, among other things, allow sub-penny quoting, and if approved, other exchanges have suggested they would submit similar filings. This would lead to a significant market structure event – one that includes sub-penny quoting and its implications on increased message traffic and market data charges, which would lead to increased technology and market data costs, as well as potential confusion by investors. Rather than an SRO rule, a sub-penny quoting proposal should be an SEC initiative due to its market-wide implications. Adopted pursuant to the requirements of the Administrative Procedures Act that insure the public has adequate notice and an opportunity to comment on the proposal, the resultant efficiency of a single proposal should produce a greater volume of focused expert analysis and input as to any difficulties in complying with the proposal, the costs of doing so, and the likely impact on the overall evolution of market structure. Competing SROs will undoubtedly comment on the proposed SEC rule, suggesting changes that reflect what was originally proposed in their individual rule filing. The SEC may adopt or reject these suggestions but importantly, experience has shown that minor modifications adopted in individual rule filings have not increased competition among the marketplaces that justifies the significant complexity they add to the compliance burdens and demands on the operational capacity of industry users.

STA believes that in addition to the review of the specifics of SEC and SRO rule proposals, the quality of regulation would be improved and investor protection served if the SEC addressed the increased need for industry input on technology and back office operations in its rule approval process. The existing rule review and approval process is increasingly ill-suited to obtaining this information. For example, in its comments on the Consolidated Audit Trail proposal, the STA stated:

In order for CAT to effectively meet its objectives, STA believes that extensive business analysis is needed that will require expertise in order, trade and post-trade systems and processes. Such an analysis will require many detailed discussions between SEC staff, the SROs and industry participant teams.

We submit that the SEC needs to take formal action on regulations, and particularly before adopting those imposing significant technological or operational burdens on the markets, to create advisory or implementation committees as permitted by law to ensure it receives input from the trading community, including experts in trading systems and products, and develops an understanding of the operational demands of the proposed rules. We are encouraged that

in the adoption of the limit up-limit down pilot program, the SROs responded to STA's recommendation to establish an Advisory Committee, which is to be composed of a broad cross-section of market participants who may submit views on matters relating to the limit up-limit down plan.

In today's exceedingly high tech equity and derivative markets, where massive amounts of data are created and utilized by market participants and investors, every rule proposal by the Commission represents a complex administrative and compliance project for the industry. The STA is concerned that consideration and approval of these rules often takes place without adequate input to, and consideration by, the Commission concerning the technical difficulties, costs, and cost-benefit analysis associated with them. This problem is exacerbated, in the case of an SRO rule filing, by the fact that SEC approval of the rule will often result in multiple filings by competitor SROs with similar but perhaps not identical proposals. It is necessary, therefore, for the SEC to not only consider these proposals on their own merits, but to include in its analysis the likely multiplication of complexity, technological demands, and costs and benefits on a market wide basis.

Finally, Commission rule review and approval would be improved if more attention was paid to possible "unintended consequences" in connection with the approval of a rule. No one can predict the future, but experts can often demonstrate the most likely outcomes of some changes, and traditionally the SEC has not given much weight to such testimony, preferring instead to approve a rule and allow competition to decide whether it will work efficiently or not.

Decimalization; Capital Formation; and Investor Confidence

There is perhaps no single market structure event that has yielded more benefit to retail investors who transact directly with the market to buy or sell securities than the introduction of decimal prices. The benefits for this class of investor are witnessed every day in the narrow bid to ask spreads in the securities in which they trade. The data which shows the implicit savings to investors brought about by narrow spreads becomes even more impressive when it shows that even during moments of volatile markets, spreads remain tight.

This benefit, which was immediate and long lasting, however, has come with a cost to the secondary markets ability to perform their capital formation function. In its letter to the Commission on May 14, 2003, STA wrote:

The raising of equity capital by corporations is the cornerstone of our economy. However, given the recent regulatory events surrounding research and investment banking and market structure changes affecting trading, the raising of capital has become exceedingly more difficult. That, in turn, is impacting the U.S. economy and its ability to create jobs.

Action must be taken soon to remedy what could be soon a capital formation crisis. A re-examination of decimalization is a good place to start.

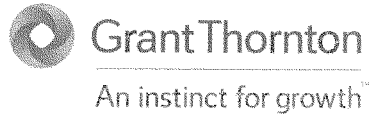
Members of this panel, we reiterate, this letter was written, May 2003.

The unintended consequences of decimalization have been dramatic, most noticeably, in the significant decline in the quantity of liquidity providers in the stocks of smaller and medium sized companies and those with less than active trading markets. Shareholders benefit from the presence of liquidity providers. They dampen market volatility to the benefit of the marketplace and investor confidence. Regulations should be reviewed to remove disincentives to the commitment of capital by trading operations with market making, both electronic and traditional, and block trading. STA is encouraged that the Jumpstart Our Business Startups (JOBS) Act included a requirement for the SEC to examine the impact decimalization has had on IPOs and on liquidity for small and mid-cap company securities. STA recommends an examination of the impact of decimalization on electronic and traditional market making, as well as on other liquidity providers, considering: the costs of maintaining a trading operation in a

decimalization regime; and the balance of market maker obligations with the benefits they may receive from that status.

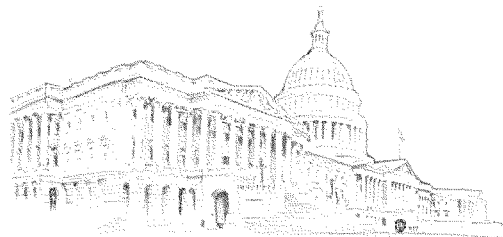
One way to conduct such an examination is through a Commission initiated pilot program utilizing a statistically significant number of small and middle capitalization company securities to study the impact on the secondary markets of quoting and trading securities in pricing increments of greater than one penny. Should the Commission move ahead with such a pilot program, a key data point that should be measured is whether private investors recognize and are willing to accept additional incremental costs in return for the opportunity to obtain the potential for greater growth characteristic of successful small- and mid-size companies.

Thank you and I look forward to answering any of your questions.



Hearing on market structure: Ensuring orderly, efficient, innovative and competitive markets for issuers and investors

Statement of David Weild, Senior Advisor — Grant Thornton LLP
before the U.S. House of Representatives Financial Services Committee
Capital Markets and Government Sponsored Entities Subcommittee
June 20, 2012



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Introduction

Chairman Garrett, Ranking Member Waters and members of the Subcommittee, thank you for inviting me to speak today about an issue of great importance to many Americans: how to structure stock markets to better support the U.S. economy and job growth.

My name is David Weild. I oversee the Capital Markets Group of Grant Thornton LLP, one of the six global audit, tax and advisory organizations. I was formerly vice chairman of The NASDAQ Stock Market with responsibility for all of its listed companies, and I ran the equity new issues business of a major investment bank for many years.

Grant Thornton's Capital Markets Group provides support to companies accessing today's global capital markets. These companies run the gamut from private companies and entrepreneurs to venture capital and private equity-backed companies — both small and large.

Summary

The current U.S. market structure fails to support the needs of small and mid-sized companies that are critical to U.S. economic success. The information I present today demonstrates the following key structural challenges that the U.S. public stock markets must confront in order to foster the growth of small companies and, thus, the economy:

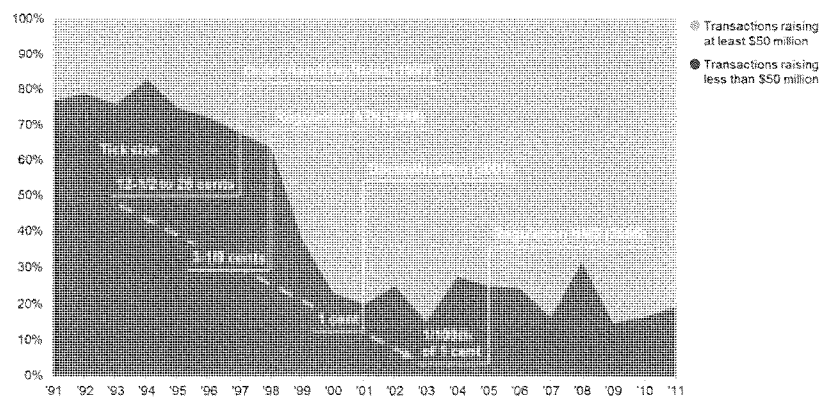
1. Inadequate tick sizes (the smallest increment by which a stock can be bought or sold) have eroded the economic infrastructure required to support small cap stocks. Inadequate tick sizes leave insufficient revenue to pay for needed visibility (research and sales) and liquidity (capital commitment) that support investment in small capitalization stocks once they are public. Fewer IPOs means fewer U.S. jobs. We now have a stock market that covers the cost of trade-execution services only.
2. We estimate that had the Order Handling Rules, Regulation ATS, Decimalization and Regulation NMS not been applied unilaterally to companies of all sizes:
 - a. instead of averaging 128 IPOs per year in the U.S. since the year 2000, we would be averaging between 500 and 1,000 IPOs per year;
 - b. instead of shrinking the number of listed companies on our stock markets, we would be growing our stock markets significantly; and
 - c. the United States would have created millions — possibly over 10 million — new jobs.
3. We also believe that inadequate tick sizes have undermined Wall Street's fundamental ability to properly execute IPOs. The evidence is that while companies that go public today are much more mature than they were in the 1990s, IPOs fail at increasingly higher rates. More deals are being withdrawn, more deals are being priced below their initial filing range, and more deals are trading below their IPO price.
4. Finally, U.S. stock market structure is clearly optimized for trading big brand and large cap stocks. This structure encourages computerized trading and speculation at the expense of fundamental investment. It does not create essential visibility for small cap companies and those companies that lack natural brand-driven visibility. There is ample rationale for treating small company stocks differently and allowing issuers to choose their own tick size within a certain range — say, 1 cent to 25 cents per share — to encourage support for their stock. Providing better economic incentives to support small cap stocks **will** lead to increased IPOs and, in turn, higher rates of capital formation and job growth at both already-public companies and private companies.

The trouble with tiny ticks

Not so long ago, during the decades of the '70s, '80s and '90s, America's stock markets were envied by economies across the globe for their ability to birth entire new industries — such as the semiconductor, biotechnology and the personal computer industries — and to propel American leadership and economic growth in those industries.

Since 1997, the U.S. stock market has suffered a devastating decline in the numbers of small initial public offerings, a result of SEC-implemented regulations that put in motion a decade-long erosion of the U.S. capital formation and support infrastructure on which small companies relied. (Notably, the drastic drop in small company IPOs occurred *before* 2002's Sarbanes-Oxley Act.) While they were meant to reduce costs for investors, their unintended repercussions are significant: decreasing numbers of small-company IPOs, increased management burden of being a public company — shifting management's focus from running the business to trying to market their stock, and a one-size-fits-all U.S. stock market where only big brands can sustain adequate visibility with investors.

Order Handling Rules (1997), Regulation ATS (Alternative Trading Systems) (1998), Decimalization (2001), and Regulation NMS (National Market System) (2005) caused a collapse in effective tick sizes



Sources: Grant Thornton LLP, Capital Markets Advisory Partners, Dealogic
Data includes corporate IPOs as of Dec. 31, 2011, excluding funds, REITs, SPACs and LPs

From 1991 to 1997, there were 2,990 small-company IPOs — representing nearly 80% of all U.S. IPOs, as shown in the chart above. Tick sizes during this timeframe were largely in 25- and 12.5-cent increments. Compare this to the period from 2001 to 2007 when effective tick sizes were cut as much as 96% — from 25 cents in the early '90s to 1 cent per share by 2011. It is not a coincidence that **small-company IPO volume fell by 92%** and now represents only 20% of total U.S. IPOs. Small tick sizes eliminate the economic incentive for Wall Street firms to maintain the visibility and liquidity in small cap stocks.

The collapse in tick sizes significantly changed the stock market structure that paid for the “infrastructure” of small broker dealers, research analysts and capital support required to take small companies public and to support them in the aftermarket (once they were public). This infrastructure is analogous to the system of highways — with roads, on-ramps, bridges, tunnels and tolls — required to support commerce.

Economic infrastructure supporting U.S. capital markets	
Stakeholders:	Economic incentives:
<ul style="list-style-type: none"> • Roads — Trade execution venues, such as NYSE, NASDAQ, Direct Edge, Liquidnet • On-ramps — Investment banks • Bridges — Market makers (firms ready to buy/sell stocks continually) committing capital • Tunnels — Analyst and broker support to investors 	<ul style="list-style-type: none"> • Tolls — Tick sizes and commissions that support the market's operations and upkeep

Since 2001, 1-cent tick sizes no longer sustain the traditional market structure that helped many small companies issue IPOs. We have let our bridges, roads and tunnels of capital formation fall into disrepair through a lack of capital investment to sustain the infrastructure.

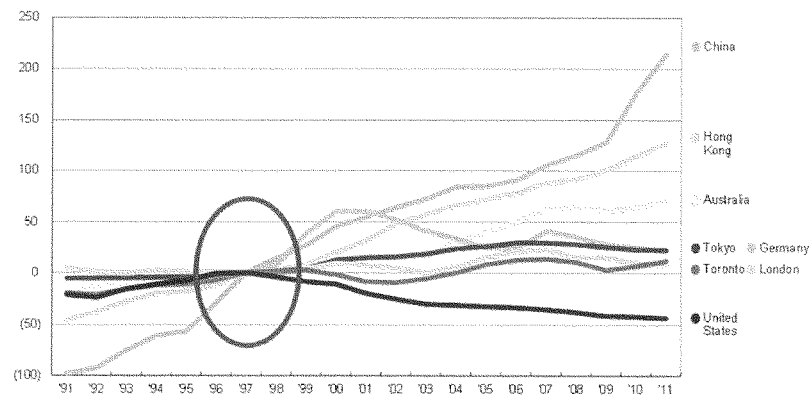
Investment banks acting as primary underwriters (or bookrunners) today **lose** money supporting small-company IPOs after they go public. Many investment banks got out of the book-run IPO business from 1994 to 2006 — a decrease of 77% to only 39 firms in 2006. Commissions decreased 96%, and the remaining investment banks dramatically cut capital commitments for small-company stocks — eliminating stock brokers and cutting the depth and breadth of research coverage offered to investors. Many small companies were delisted from exchanges, and today, weak capital commitment from investment banks remains a serious impediment to small business accessing U.S. capital markets.

Small capitalization companies and capital formation			
	Before 1997	After 2001	% change
Tick sizes	\$0.25 per share	\$0.01 per share	-96%
Investment banks (acting as bookrunner)	167 (1994)	39 (2006)	-77%
Small company IPOs	2,990 (1991-1997)	233 (2001-2007)	-92%

Small companies need salesmen, traders and analysts to create liquidity for their securities, but today, computers have taken the place of these people, thereby decreasing the visibility of small cap stocks.

Continuous decrease in IPO listings

The current market structure has increased the burdens on management and, we believe, likely elevated their cost of capital while shutting the door to the IPO market. As a consequence, since 1997 the number of listed companies has declined every year, and the U.S. has now lost 43.5% of all listed companies. Our markets will continue to shrink unless we increase the incentives to support companies in the aftermarket.

Indexed value of selected global exchange listings (1997 = 0)

Sources: Capital Markets Advisory Partners LLC and World Federation of Exchanges
Based on the number of listed companies at year-end, excludes funds. Data as of Dec. 31, 2011.

U.S. capacity to generate new listings is also well below replacement needs to support economic growth and job creation. In fact, since 2002 it takes an average of 340 new listings just to replace what is being lost every year through the combination of mergers and acquisitions and regulatory delistings — and the U.S. has not had 340 or more listings in any one year since the 1990s.

	NYSE and NASDAQ										
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Net change in listings	(492)	(427)	(601)	(114)	(16)	(166)	(232)	(293)	(344)	(507)	(264)
IPOs	76	73	207	188	189	213	35	61	153	119	131
Replacement level	559	500	287	302	284	379	267	354	237	225	340

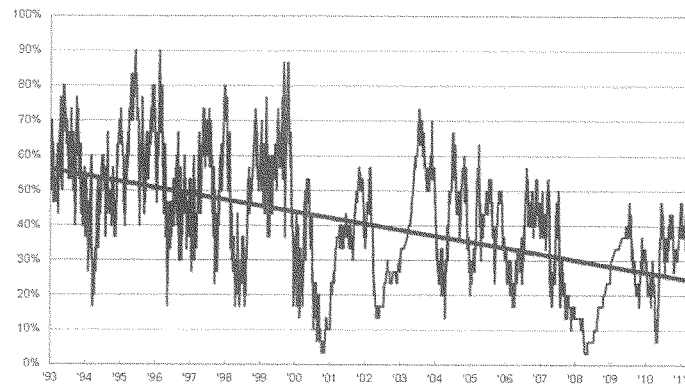
Source: Capital Markets Advisory Partners LLC

Inadequate tick sizes have undermined Wall Street's fundamental ability to properly execute IPOs

The current U.S. capital markets structure is failing all issuers, not just small businesses. Companies that are accessing the IPO market today are fewer in number and much more mature than they were in the

1980s and 1990s, but as illustrated in the charts below, IPO success rates have been in steady decline for the last 15-plus years. More deals are being withdrawn, more deals are being priced below their initial filing range, and more deals are trading below their IPO price.

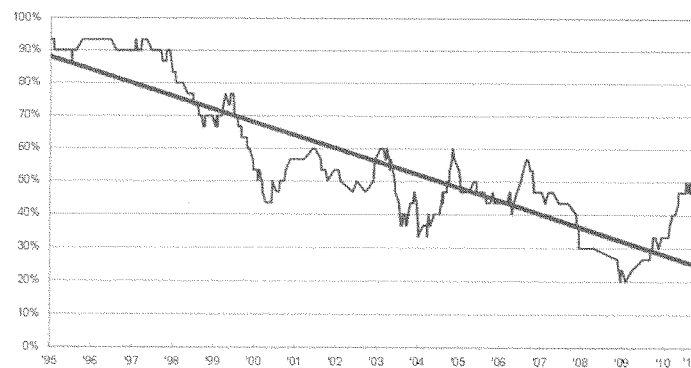
Success rate of all IPOs



Source: Capital Markets Advisory Partners LLC. All rights reserved.
Includes only corporate issuers, excluding funds, MLPs, SPACs and REITs.
Based on the average success rate of the last 30 filed deals, up to one year ago. A successful deal is defined as 1) priced within one year of filing, 2) priced at or above the low end of the filing range and 3) trading at or above issue price one month after pricing.

While most of our discussions have been around the adverse effects of market structure on small companies, large-cap IPOs are also showing signs of stress. Even large IPOs like Facebook are breaking issue price more often in today's market.

Success rate of IPOs with proceeds greater than \$500 million

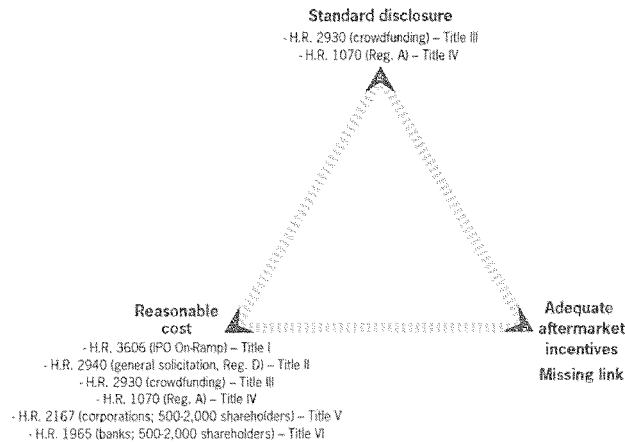


Source: Capital Markets Advisory Partners LLC. All rights reserved.
Includes only corporate issuers, excluding funds, MLPs, SPACs and REITs.
Based on the average success rate of the last 30 filed deals, up to one year ago. A successful deal is defined as 1) priced within one year of filing, 2) priced at or above the low end of the filing range and 3) trading at or above issue price one month after pricing.

Aftermarket support: biggest obstacle to resurgence in the IPO market

Markets and small companies need to meet three criteria to thrive. Any market lacking any one of these three criteria will not live up to its potential:

1. **Standard disclosure:** Does the market provide transparency and standard disclosure?
2. **Reasonable cost:** Are the costs issuers bear to access and be in this market reasonable?
3. **Adequate aftermarket incentives:** Are there adequate aftermarket incentives to support visibility and liquidity?



The above chart maps Titles I through VI of the JOBS Act to our understanding of how each of these Titles will improve capital formation. Aftermarket support is the biggest obstacle blocking resurgence in the U.S. IPO market. Today's public markets are overly complex and do not behave in a manner that the average retail investor understands. Without adequate economic incentives, investment banks cannot afford to compensate the salesmen, traders and research analysts who can provide greater transparency to investors regarding small company stocks. Instead of supporting all company sizes, U.S. market structure is optimized for trading (not investing) primarily in S&P 500 stocks, one of the many

“winners” resulting from the aforementioned regulatory changes. Our conclusion is that more needs to be done in addition to the JOBS Act to improve aftermarket support, which we believe is (based on the 1998 drop-off in tick sizes) by far the biggest obstacle to resurgence in the IPO market and resultant job growth.

Winners		Losers	
• Speculators	• Trading-oriented institutions	• Small companies	• Equity research
• Big investment banks	• Dark pools	• Entrepreneurs	• IPOs
• Hedge funds	• Expert networks	• Small investment banks	• Liquidity in small cap stocks
• Day traders	• Big company acquirers	• Venture capital	• Transparency in small cap stocks
• Electronic trading		• Market-makers	• Long-term investors
• Volatility		• Stockbrokers (advice)	• U.S. economy and jobs

In an economy the size of the United States⁹, all issuers should be offered a choice in how the market trades their stock. Because of Regulation NMS, an issuer’s stock is traded in only one way — the computerized, high-frequency, dark pool way.

Tick size choice for issuers

We commend Congress for its bipartisanship in passing the JOBS Act and paving the way for improved capital formation. It is a good first step, but even Congress recognized the need for greater insight and analysis of U.S. market structure, specifically instructing the SEC to study the impact of decimalization on (1) the number of IPOs, and (2) liquidity for small and middle capitalization company securities. Following the study, the SEC is allowed to set a minimum trading increment (1 to 10 cents) if it is determined that “emerging growth companies” should be traded and quoted at an increment greater than 1 cent.

We recommend that the SEC also initiate a pilot program to let emerging growth and other small cap companies choose their own tick size, preferably between 1 cent and 25 cents (although the SEC must take care not to let trading rebates within the spread undermine the intent to pay for needed sales, research and capital commitment), following parameters determined by the SEC. We believe that managements and their boards must have input into market structure and the impact on shareholders, and an equal voice to balance that of the trading community. What better way to do this than to give issuers control over their own tick size?

During this pilot program, the SEC could also gather valuable research and data to inform the debate on how to best structure the U.S. capital markets to support capital formation and job growth. **The SEC could evaluate the impact of different tick sizes on the pricing and trading patterns of emerging growth and small cap companies, and track variances across specific industries and company sizes.** These, among other areas of study, would help define optimum tick sizes to keep costs low for investors and attract the necessary infrastructure support. Market forces would then become the determinant of tick sizes, and small companies would no longer be adversely affected by a one-size-fits-all market structure.

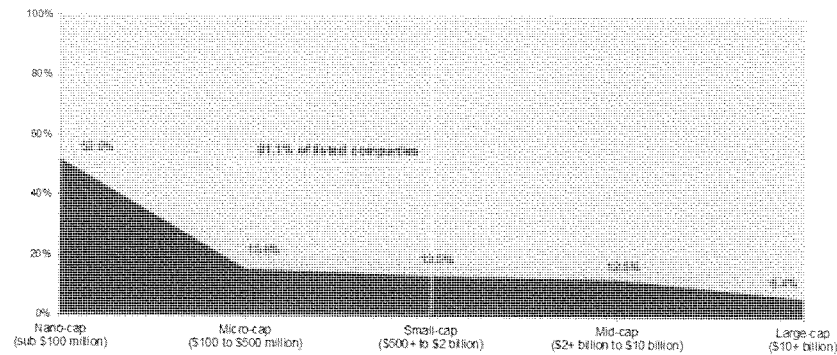
Since today’s investment banks lose money supporting most IPOs in the aftermarket, increasing aftermarket incentives is required to fuel investments in equity distribution, sales and aftermarket

support for small public companies. Increases in tick sizes would create instant mass customization of stock markets and their choices. Markets would also realign and refocus distribution on investors, not traders, and improve the performance of IPO shares and investor returns — all while laying a foundation for increased IPOs, economic growth and job creation.

Small, micro- and nano-cap listed companies represent only 6.6% of cumulative market value, yet they represent fully 80% of all publicly listed companies. Thus, as a public policy matter, there is ample rationale for treating small company stocks differently and allowing issuers to choose — by setting their own tick size — how the market trades their stock.

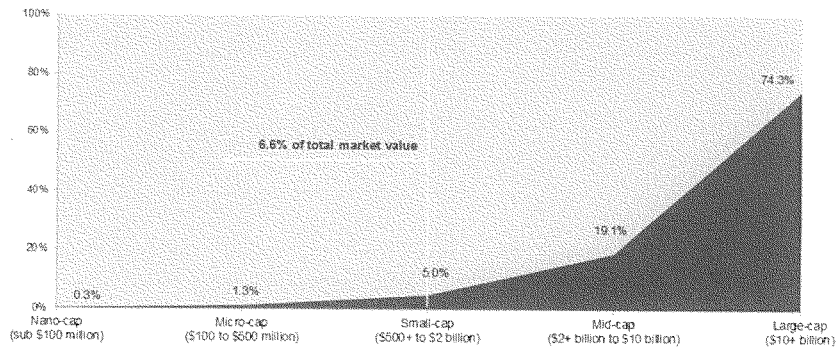
While 81% of all public companies are sub-\$2 billion in market value...

Percentage of total number of listed companies



...sub-\$2 billion companies represent less than 7% of total public company market value

Percentage of total public company market value



Sources: Grant Thornton LLP and Capital IQ
Includes NASDAQ, NYSE (including AMEX) and OTC listings. Corporate issuers only, excluding holding companies, funds, MLPs, SPACs, REITs and other trusts.

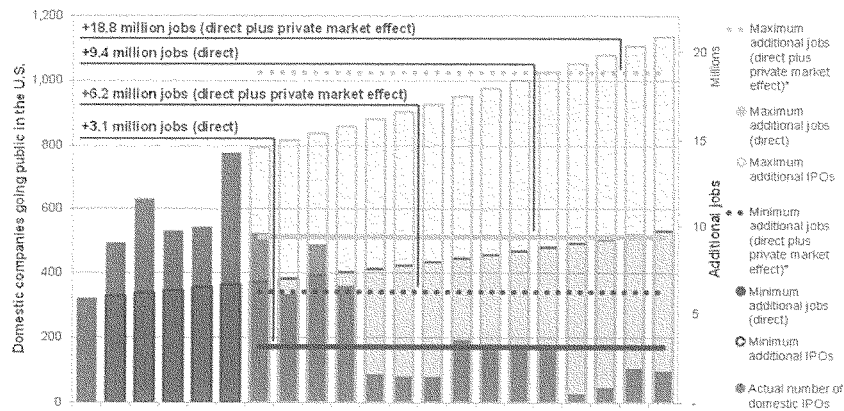
Conclusion: IPOs lead to job growth

Efficient markets need to do more than create rock-bottom trading costs for market speculators. Markets also need to improve the allocation of capital and enhance long-term economic growth. When today's companies cannot raise capital effectively through the IPO market, they must look to a merger or acquisition — and jobs are lost, not gained.

An opportunity cost of millions of jobs and untapped economic growth for the U.S. economy

According to the graphic below, had the Order Handling Rules, Regulation ATS, Decimalization and Regulation NMS not been applied unilaterally to companies of all sizes, the U.S. market could have generated between 500 and 1,000 IPOs a year — this versus the paltry 128 IPOs per year that we have averaged since 2000.

A major contributor to employment



Back in 1971, there was a small technology company that was unprofitable on an operating basis. It was only three years old when it went public, raising roughly \$8 million — approximately \$44 million in today's dollars. It created a revolutionary product: the first commercially available microprocessor chip. After it went public, it actually missed its first delivery date and investors cut its stock price in half. Talk about risk! That kind of company wouldn't even make it to the IPO stage in today's unforgiving market.

The name of that company? Intel. How many Intels have been needlessly lost to the U.S. economy by today's market structure?

Congress has the power to help reverse our current situation and bring back the stock market that was once the envy of economies throughout the world for its ability to foster U.S. economic leadership. We recommend that Congress support an SEC pilot program that allows emerging growth companies and other already-public, small capitalization companies to customize their tick sizes.

Thank you for the opportunity to present information on such an important topic. I am pleased to answer any of your questions.

Additional materials

June 8, 2012, presentation to SEC's Advisory Committee on Small and Emerging Companies

Why are IPOs in the ICU?

Market structure is causing the IPO crisis — and more

A wake-up call for America

Wall Street Journal OpEd entitled, "How to revive small-cap IPOs," October 27, 2011

About David Weild

David Weild is a Senior Advisor to Grant Thornton LLP's Capital Markets Group, which provides strategies and insights into today's global capital markets.

Experience

David is the Chairman & CEO of Capital Markets Advisory Partners and the former vice-chairman and executive vice-president of The NASDAQ Stock Market, with oversight of the more than 4,000 listed companies. Prior to NASDAQ, he spent 14 years at Prudential Securities in a number of senior management roles, including president of eCommerce, head of corporate finance, head of technology investment banking and head of equity capital markets in New York, London and Tokyo. He worked on more than 1,000 IPOs, follow-on offerings and convertible transactions and was an innovator of new issue systems and securities underwriting structures, including the use of Form S-3s to mitigate risk for small capitalization companies raising equity and convertible debt capital. He created the Market Intelligence Desk — or “MID” — while at NASDAQ to support issuers in their quest to better understand what was impacting trading in their stocks.

Education

David holds an MBA from the Stern School of Business and a BA from Wesleyan University. He has studied on exchange at The Sorbonne, Ecole des Haute Etudes Commerciales and The Stockholm School of Economics.

Industry participation

David has participated in the NYSE's and National Venture Capital Association's Blue Ribbon Regional Task Force to explore ways to help restore a vibrant IPO market and keep innovation flourishing in the United States, and is Chairman of the International Stock Exchange Executives Emeriti (ISEEE) Small Business Financing Crisis Task Force. He served as Director of the National Investor Relations Institute's New York chapter and Helium.com (sold to RR Donnelly) and currently serves as a Director of Hanley & Associates and as Chairman of the Board of Tuesday's Children, the non-profit that serves 9/11 families, first responders and their families. David testified before the CFTC-SEC Joint Panel on Emerging Regulatory Issues in the wake of the May 2010 “flash crash,” and before the SEC Advisory Committee on Small and Emerging Companies on June 8, 2012. David is often interviewed by the financial news media.

Publications

David and Edward Kim have co-authored a number of Grant Thornton studies, including *Why are IPOs in the ICU?* in 2008. Released in the fall of 2009, *Market structure is causing the IPO crisis* (updated by *Market structure is causing the IPO crisis — and more* in 2010) and *A wake-up call for America* have been entered into the Congressional Record and the Federal Register. They also authored the chapter, *Killing the Stock Market That Laid the Golden Eggs* in the recent book on high frequency and predatory practices entitled, *Broken Markets*, by Sal Arnuk & Joseph Saluzzi, published in May 2012 by FT Press (Financial Times).

About Grant Thornton LLP

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April 29, 2010

By Electronic Mail (rule-comments@sec.gov)

Ms. Elizabeth M. Murphy
Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: Concept Release on Equity Market Structure: Release No. 34-61358;
File No. S7-02-10

Dear Ms. Murphy:

The Securities Industry and Financial Markets Association (“SIFMA”)¹ welcomes the opportunity to comment on the Securities and Exchange Commission’s (“SEC” or “Commission”) concept release (“Concept Release”) on equity market structure.² We appreciate the timeliness of the Commission’s review, and we are pleased to comment on the range of issues discussed in the Concept Release, including, among others, the performance of the equity markets, high frequency trading (“HFT”) and undisplayed liquidity. It has been ten years since the Commission’s last general review of the equity markets,³ and much has changed during that time. For example, there have been significant developments in the over-the-counter (“OTC”)

¹ The Securities Industry and Financial Markets Association (“SIFMA”) brings together the shared interests of hundreds of securities firms, banks and asset managers. SIFMA’s mission is to support a strong financial industry, investor opportunity, capital formation, job creation and economic growth, while building trust and confidence in the financial markets. SIFMA, with offices in New York and Washington, D.C., is the U.S. regional member of the Global Financial Markets Association (“GFMA”). For more information, visit www.sifma.org.

² Exchange Act Rel. No. 61358 (Jan. 14, 2010), 75 Fed. Reg. 3594 (Jan. 21, 2010) (“Concept Release”). In addition to the Concept Release, the Commission has issued a number of proposals and adopted rules related to equity market structure during the past months. See, e.g., Exchange Act Rel. No. 61595 (Feb. 26, 2010), 75 Fed. Reg. 11232 (Mar. 10, 2010) (adopting a short sale price test and other amendments to Regulation SHO); Exchange Act Rel. No. 61379 (Jan. 19, 2010), 75 Fed. Reg. 4007 (Jan. 26, 2010) (proposing risk management controls for broker-dealers with market access) (“Market Access Release”); Exchange Act Rel. No. 60997 (Nov. 13, 2009), 74 Fed. Reg. 61208 (Nov. 23, 2009) (proposing rules regarding non-public trading interest); Exchange Act Rel. No. 60684 (Sept. 18, 2009), 74 Fed. Reg. 48632 (Sept. 23, 2009) (proposing a ban on flash orders); Exchange Act Rel. No. 60388 (Jul. 27, 2009), 74 Fed. Reg. 38266 (Jul. 31, 2009) (adopting various amendments imposing the so-called “close-out” requirement in Interim Temporary Final Rule 204T of Regulation SHO).

³ See Exchange Act Rel. No. 42450 (Feb. 23, 2000), 65 Fed. Reg. 10577 (Feb. 28, 2000) (requesting comment on issues relating to market fragmentation) (“Market Fragmentation Release”).

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market, including the registration of Nasdaq as a national securities exchange. There also have been dramatic improvements in information processing and communications technology, facilitating the development of new trading strategies, such as HFT. The growth of trading on undisplayed liquidity venues, increased competition among trading centers and the resulting dispersion of order flow, Regulation NMS, and regulatory consolidation (e.g., the creation of the Financial Industry Regulatory Authority ("FINRA"))⁴ all have contributed to a market that differs in numerous ways from that reviewed ten years ago.

Notwithstanding generalizations to the contrary, SIFMA believes that the market structure changes discussed in the Concept Release cannot be universally characterized as favorable or unfavorable market developments. They are more complex in that they represent advancements for investors and the markets in some sense, yet they may also present issues in terms of certain national market system ("NMS") goals. The challenge is to recognize and realize the benefits offered by these developments while working to carefully address any associated, valid regulatory concerns. We believe the Commission should evaluate each of the issues presented in the Concept Release in light of its ability to promote key and distinct NMS goals: (1) efficient pricing and best execution; (2) market liquidity; (3) market transparency; (4) fair and orderly markets; and (5) competition among markets and investor choice.

Section I of this letter discusses SIFMA's views regarding the current performance of our equity markets. Section II offers our comments on a number of market structure issues raised in the Concept Release, including HFT and undisplayed liquidity, among others. In addition to evaluating current equity market structure and the issues in the Concept Release, we believe it is important to take a longer-term look at the direction of the equity markets. Section III therefore sets forth suggested equity market goals and regulatory initiatives that market participants and regulators should work toward in the near future, including the need for additional market data reform to protect the interests of retail investors. We look forward to discussing our comments and any other issues with the Commission as it continues its market structure review.

I. Equity Market Structure: Governing Principles and Current Performance

A. Governing Principles

Section 11A of the Securities Exchange Act of 1934 ("Exchange Act") sets out the principles of the NMS, all of which Congress deemed were to be achieved through a system of competing markets linked through technology.⁵ These principles include:

- economically efficient execution of securities transactions;
- fair competition among brokers and dealers and between markets;

⁴ FINRA was formed by a consolidation of the enforcement arm of the New York Stock Exchange ("NYSE"), NYSE Regulation, Inc., and the National Association of Securities Dealers ("NASD") in 2007. See Exchange Act Rel. No. 56145 (Jul. 26, 2007), 72 Fed. Reg. 42169 (Aug. 1, 2007).

⁵ See H.R. Rep. 94-123, 94th Cong., 1st Sess. 50 (1975).

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- availability of quotation and transaction information;
- practicability of executing investors' orders in the best market; and
- an opportunity, consistent with economically efficient execution and the practicability of executing investors' orders in the best market, for investors' orders to be executed without the participation of a dealer.⁶

As the Commission has acknowledged, the various NMS goals may be difficult to reconcile at times.⁷ For example, intermarket competition implies a greater dispersion of order flow than might otherwise be the case in a centralized equity market and this, in turn, requires greater efforts by broker-dealers to achieve best execution. Similarly, the Concept Release raises questions regarding the aligned or contrasting interests of long-term investors and professional traders – the resolution of which may have policy implications in assessing how best to advance the NMS in any particular instance.⁸ Notwithstanding these and other tensions, NMS goals clearly remain the touchstone in evaluating current market structure. Restating them somewhat, SIFMA believes these NMS principles equate to ensuring that Commission regulations promote efficient pricing and best execution; facilitate market liquidity; promote market transparency; maintain fair and orderly markets; and preserve competition among markets so as to provide investors alternatives for meeting their financial objectives.

In particular, SIFMA believes that robust competition and innovation are hallmarks of the US equity markets, and that regulation that unnecessarily limits competition dampens the incentive to innovate. Instead, regulation should encourage fair competition among broker-dealers and among markets because such competition inevitably leads to greater choices for investors, which facilitates efficient pricing and best execution. As discussed below, we are concerned that regulation that functionally rewards market participants that have not kept pace with market developments by easing competitive pressures to perform efficiently and effectively in the marketplace will hinder further market development, stifle innovation, and disadvantage our markets and US investors in the global marketplace.

B. Current Equity Market Structure

Our current equity markets are characterized by efficient and effective linkages and healthy competition among markets and market participants. This is demonstrated not only by statistics cited in the Concept Release and other studies, described below, but also through the practical observation of the markets. For example, during the 2008 financial crisis, trading in the equity markets continued without a significant hitch, permitting investors to find liquidity even during this volatile period. This is in contrast to the liquidity freezes and instability that were evident in other markets (i.e., the credit markets) during that time.

⁶ Exchange Act Section 11A(a)(1)(C), 15 USC § 78k-1(a)(1)(C).

⁷ Concept Release at 3597.

⁸ *Id.* at 3596.

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The Concept Release discusses various trends that, in our view, affirm the strength of the equity markets. For example, the SEC notes a significant amount of order flow dispersion among various market centers, focusing on the dispersion of order flow of NYSE-listed companies in particular.⁹ We view such order flow dispersion as a sign of healthy intermarket competition.¹⁰ The Commission also notes that execution speeds have improved significantly. This too, we believe, is a benefit to our markets as increased transaction speed is important to obtaining best execution in increasingly automated markets. In fact, among the more important outcomes of Regulation NMS were the elimination of the antiquated Intermarket Trading System (“ITS”) rules and the enhancement of quote accessibility/firmness brought about by mandating that only automated quotes may receive trade-through protection.

Other researchers have noted similar advancements in the equity markets. One study points out an increase in average daily traded volume (“ADTV”) from three billion shares in 2003 to ten billion shares in 2009.¹¹ Average trade sizes have shrunk, perhaps due to the rise in algorithmic trading; however, bid-offer spreads are tighter than ever before.¹² Commissions also remain at low levels. Intermarket trade-through protection (the Order Protection Rule (“OPR”), Rule 611 of Regulation NMS) has facilitated increasingly efficient private linkages between trading centers – replacing the less efficient ITS linkage. We also note that the Commission and FINRA are engaged in rulemaking that should provide additional enhancements to market transparency.¹³

Although SIFMA believes today’s markets are strong, there are areas which merit improvement. Market transparency continues to increase for institutional market participants, but SIFMA remains concerned about the disparate level of transparency afforded retail investors. While decimalization has reduced spreads to the benefit of all investors, it has, not surprisingly, led to decreased size at the national best bid and offer (“NBBO”). Institutional investors are more apt to have technology that allows them to aggregate size at a rapidly changing NBBO or to access

⁹ See, e.g., *id.* at 3600; see also O’Hara, Maureen and Mao Ye, *Is Market Fragmentation Harming Market Quality?* (Mar. 2009), 3-4, available at <http://ssrn.com/abstract=1356839> (discussing findings that market fragmentation does not appear to harm market quality).

¹⁰ NYSE executed approximately 79.1 percent of the consolidated share volume in its listed stocks in January 2005, compared to 25.1 percent in October 2009. Concept Release at 3595.

¹¹ Angel, James J., Lawrence E. Harris, Chester S. Spatt, *The Economics of Trading in the 21st Century* (Feb. 23, 2010), 5, available at <http://www.knight.com/newsRoom/pdfs/EquityTradinginthe21stCentury.pdf>.

¹² See O’Hara at 19, *supra* note 9; Concept Release at 3605, fn. 60.

¹³ Additional information about the trading activity of alternative trading systems (“ATS”), if adopted, will add to the strength and efficiency of our equity markets. See Exchange Act Rel. No. 60997 (Nov. 13, 2009), 74 Fed. Reg. 61208 (Nov. 23, 2009) (proposing regulation regarding non-public trading interest). However, as noted in our comment letter on that proposal, we believe the Commission can achieve its ATS transparency goals without risking harmful disclosure of confidential customer information through delayed, rather than real-time, reporting of ATS identity on trade reports. See Letter from Ann Vleck, Managing Director and Associate General Counsel, SIFMA, to Elizabeth Murphy, Secretary, SEC, Feb. 18, 2010 (advocating delayed ATS trade reports to avoid harmful disclosure of confidential investor trading interest). The SEC has approved new FINRA reporting requirements that reduce OTC trade reporting time from 90 to 30 seconds, which should improve market transparency in the near term. See Exchange Act Rel. No. 61819 (Mar. 31, 2010); 75 Fed. Reg. 17806 (Apr. 7, 2010).

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individual market data feeds that show depth beyond the NBBO, but these tools and private data feeds are available to retail investors to a much lesser extent. This is especially problematic as US investors increasingly are managing their own portfolios, including investments for their retirement or their children's educational needs. Therefore, it is becoming more important that all investors have access to quality market data at reasonable prices. In addition, as exchanges have become for-profit entities, it becomes critical that the Commission take steps to support technology benefits for all investors, particularly with respect to access to enhanced market data. We discuss market data issues in greater detail in Section III.D of this letter.

As noted, SIFMA generally believes that our equity markets are effective and robust. However, in addition to the concerns expressed immediately above, we recognize that certain market practices have raised market efficacy or fairness concerns that need to be evaluated and, based on the results of that evaluation, perhaps addressed. We discuss certain of these issues below.

II. Current Market Structure Issues

A. High Frequency Trading and Related Issues

HFT is an example of technological and financial innovation that has generated both praise and strong criticism. We note that a variety of market participants employ HFT, ranging from those engaged solely in proprietary trading (whether as a proprietary trading firm that may or may not be a registered broker-dealer, a proprietary trading desk of a multiservice broker-dealer, or a hedge fund)¹⁴ to broker-dealers that handle customer orders. HFT is a type of *trading*, not a type of *trader* – a distinction important to keep in mind when considering the various trading practices and tools often utilized in HFT. Not all market participants within a particular category (i.e., hedge funds, proprietary trading broker-dealers, etc.) engage in HFT, and therefore any regulatory initiatives designed to address issues raised by HFT should be targeted to the type of activity, rather than to the market participant, in order to achieve their objectives without unintended consequences.

HFT provides significant liquidity to investors, including long-term investors. Passive market-making trading strategies of HFT traders, for example, generally involve the submission of nonmarketable resting orders that provide liquidity at specified prices.¹⁵ As the Commission notes, HFT traders largely have replaced more traditional types of liquidity providers in the equity markets, such as exchange specialists and OTC market makers.¹⁶ To the extent that HFT orders – a significant portion of the overall number of orders in the market – establish or supplement the NBBO, they not only facilitate the trading objectives of HFT traders, but also serve as a reference point for executions by other market participants. Moreover, certain strategies associated with HFT, such as arbitrage strategies, help bring such prices in line by identifying and capitalizing on disparities between related financial instruments in different

¹⁴ Concept Release at 3606.

¹⁵ *Id.* at 3607.

¹⁶ *Id.*

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markets – thereby facilitating pricing efficiency. More generally, HFT is representative of technological advancements and broader changes in the provision of liquidity in the market – for instance, the migration from the single specialist system to the use of automated Designated Market Makers and Supplemental Liquidity Providers on the NYSE in recent years – changes that, in our view, have improved the equity markets.¹⁷ HFT also has enhanced competition among markets. US exchanges and market participants – as well as foreign exchanges – have recognized these benefits and modified their trading infrastructures to accommodate HFT.¹⁸

However, as HFT has increased, issues have arisen regarding the fairness of HFT and whether such trading imposes an unreasonable amount of systemic risk on the equity markets. As discussed below, SIFMA believes there is a need for more disclosure about HFT and related issues. Such disclosure not only would provide market participants with more information related to an important market practice, but also would facilitate the Commission's efforts to appropriately regulate the markets. Similarly, we support the Commission's goal of enhancing risk controls related to market access, including HFT, although, as discussed below, significant issues need to be addressed with respect to proposed Rule 15c3-5.

1. Co-Location, Individual Data Feeds, and HFT Trading Strategies

a) Co-Location Arrangements

Co-location arrangements involve the hosting of servers by an exchange, trading center, or third party in close proximity to the matching engine of the exchange or trading center with the goal of minimizing network latencies in the transmission and execution of orders. Market participants that are confident in the efficiency of communication technologies and execution facilities are likely to be more comfortable, from a market risk perspective, with submitting greater numbers of orders, in larger size and over a larger universe of stocks, than they might under less optimal conditions. To this extent, co-location arrangements benefit all investors. However, concerns have been raised that the ability of some firms to utilize co-location arrangements is fundamentally unfair to other market participants. Questions also have been posed regarding whether firms using co-location arrangements ought to be subject to regulatory obligations similar to those formerly attendant on specialists and market makers. Related issues include whether the speed at which participants are permitted to access the markets should be controlled in a manner that provides more uniformity among market participants.

As an initial matter, SIFMA notes and agrees with statements in the Concept Release that exchange co-location arrangements are and should be subject to the rule filing requirements of

¹⁷ See Exchange Act Rel. No. 58184 (Jul. 17, 2008), 73 Fed. Reg. 42853 (Jul. 23, 2008) (creating the NYSE's New Market Model, including the creation of Designated Market Makers and the phasing out of the NYSE specialist); Exchange Act Rel. No. 58877 (Oct. 29, 2008), 73 Fed. Reg. 65904 (Nov. 5, 2008) (establishing the NYSE Supplemental Liquidity Provider Pilot).

¹⁸ See, e.g., Nina Mehta, High-Frequency Trading Is a Tough Game, Traders Magazine Online News, Nov. 24, 2009; see also, LSE Changes Tariffs for High Frequency Trading to Boost Volumes, Bloomberg Network (Apr. 22, 2010) (LSE noting that the changes are "...designed to encourage tighter spreads, greater depth of liquidity and improved execution likelihood on the order book to the benefit of all participants.").

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Section 19(b) of the Exchange Act, including the requirement that such proposed arrangements must be determined by the Commission to be consistent with the Exchange Act before being approved.¹⁹ Provided that co-location facilities are made available to exchange members and other persons using those facilities on fair and reasonable terms, including physical location within a facility, and pursuant to fees that are equitably allocated among members and other persons using those facilities, we do not view co-location arrangements as conferring an “unfair advantage” to firms that use them or as creating a “two-tiered” market.²⁰ Exchange members that have the capability and desire to enter into co-location arrangements pursuant to exchange rules that have been reviewed and approved by the SEC under the Exchange Act should be permitted to do so.

We do, however, believe that added disclosure about co-location and other market access arrangements would be beneficial to market participants. Such disclosure might describe standard, high speed, co-location, or other means by which members may access an exchange or ATS, and provide market participants with details regarding the categories of market participants that use each means of access, the data capacity associated with each arrangement, and the quotation and transaction volume attributable to each arrangement. For example, the Commission could create greater transparency surrounding co-location arrangements by requiring exchanges that offer co-location services to disclose the number of market participants using co-location, the percentage of the exchange’s orders, quotes, or executed transactions associated with co-location, and a general description of the activity of co-location users (i.e., number of messages per second, percentage of time at the NBBO, and activity in various tiers of securities).

We do not believe, however, that firms engaging in co-location arrangements should have affirmative or negative obligations solely as a result of such arrangements. Co-location arrangements are unlike exchange specialist status (where, as the SEC remarks, specialists enjoyed unique time and space advantages on exchange floors²¹) because they should be available to any firm willing to devote resources to entering into such an arrangement. Thus, we do not believe that participants in these arrangements should be required to accept affirmative or negative trading obligations.

b) Direct Data Feeds and the Processing of Market Data

Concerns also have been raised regarding whether it is fair that some market participants are able to use individual or direct market data feeds. Related questions include whether there should be “batch processing” or other measures to throttle the transmission of data in the markets in an attempt to level the playing field for data consumers, or whether data feeds should continue to disseminate as much information as is currently available.

¹⁹ See Concept Release at 3610.

²⁰ Exchange Act Section 6(a)(4), 15 USC § 78f(a)(4).

²¹ Concept Release at 3611.

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Restrictions on the availability of market data or the content and transmission speed of such data would be a significant step back for our markets. As recently as the adoption of Regulation NMS, the Commission acknowledged the utility that direct market data feeds provide to firms and investors in terms of providing prompt and, in many instances, more fulsome information about potential trading liquidity in a given market.²² SIFMA believes that firms should continue to be able to use these direct market data feeds without any mandated delay to permit consolidated data to reach all users at the same time. Such a delay would slow the market to the transmission capabilities of a single plan processor and thereby reduce incentives for technological development, rather than encourage plan processors to update their systems to remain competitive in the markets. Batch processing of orders would exacerbate this problem by basing data transmission speed on the capabilities of an even larger universe of market participants.²³ Slowing the flow of market information would impede price discovery and reduce the pricing efficiencies that we currently enjoy among markets. We believe slower markets also would present greater opportunities for gaming. Rather than considering an approach that would slow technology or progress, the Commission should consider approaches that make direct market data feeds available to a broader universe of market participants, including retail investors, on fair and reasonable terms, and that enhance the speed and content of consolidated market data. We discuss our views on this issue in Section III.D of this letter.

It may, however, be appropriate for the Commission to give greater consideration to the manner in which direct market data feeds may be used by market participants. As noted, direct market data often is faster and more detailed than consolidated data. Also, direct data feed recipients generally are able to more easily trace orders they submit to an exchange or electronic communications network ("ECN") using such feeds – facilitating, for example, their ability to analyze the implications of a particular trading strategy. But some SIFMA members believe that direct market data feeds may be used by third parties to generate more implicit information about the markets. For example, member firms state that direct market transaction information may be linked to particular displayed quotations and, in some instances, direct market data may be used to help discern the presence of reserve orders. As discussed below, SIFMA does not believe that the use of trading strategies used to identify potential liquidity in various markets, whether displayed or undisplayed, necessarily requires a regulatory response. However, it might be beneficial for market participants to have a better understanding of the ways in which their market data, if provided to a trading center publishing direct market data, might be used by other

²² See Exchange Act Rel. No. 51808 (Jun. 9, 2005), 70 Fed. Reg. 37496, 37566-67 (Jun. 29, 2005) (authorizing the independent distribution of market data outside of what is required by the joint industry market data plans).

²³ Ironically, the Concept Release itself presents a compelling argument against restraints on communications technology. According to the release, the average speed of execution for small, marketable orders on the NYSE was 10.1 seconds in 2005, compared to 0.7 seconds in October 2009. Concept Release at 3595-96. Had the Commission adopted an approach similar to the batch processing idea discussed in the Concept Release, execution speeds on the NYSE not only would have been less likely to have decreased, but also other markets presumably would have seen their execution speeds constrained based on the capabilities of the NYSE or other markets. It is difficult to understand the incentive any market would have to improve on such speeds under such an approach.

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market participants. We urge the Commission to give further thought to this issue, including whether it merits an empirical review.

c) Trading Strategies

The SEC raises a number of questions regarding HFT trading strategies, including whether the implementation of particular strategies benefits or harms long-term investors and, if so, whether regulatory initiatives are necessary to address such strategies. For example, the Commission asks whether it should impose a minimum requirement on the duration of orders (such as one second) before they can be cancelled, either generally, in particular contexts, or when used by particular types of traders, or whether the use of “pinging” orders by all or some traders to assess undisplayed liquidity should be prohibited or restricted in all or some contexts.²⁴ We think any such attempts are ill-advised.

We caution the Commission against hastening to categorize trading strategies as “beneficial” or “harmful.” In the first instance, absent clear fraud or manipulation, we believe that engaging in such line drawing on a broad basis is fraught with difficulties. For example, market participants have long been astute to the possibility of other orders in the market that, if executed, could have a serious impact on the value of their portfolios. Thus, strategies designed to anticipate the trading of other market participants are not novel concepts, and the ability to identify buyers and sellers in the market – absent fraud, manipulation, or a breach of duty – should not result in prohibitions on a strategy that aims to make such determinations. In addition, existing trading strategies, whether for HFT or otherwise, will evolve in ways that inevitably will outpace regulatory efforts to categorize them, and entirely new trading strategies similarly will develop at a rapid pace.

Rather than taking a path that will require it to engage in such line drawing, the Commission would better serve investors by: (1) relying on its general antifraud authority to address discrete situations in which market participants engage in fraudulent or manipulative activity, and (2) adopting rules that would facilitate the provision of more information about HFT strategies to the Commission. The Commission would, of course, have to consider the extent to which such disclosure might lead to information leakage or otherwise disadvantage market participants, and take appropriate steps to avoid such adverse consequences (such as requiring the disclosure for regulatory and not public consumption, or publishing information in aggregated rather than disaggregated form). In this regard, SIFMA looks forward to reviewing and commenting separately on the Commission’s proposal for large trader reporting.²⁵

SIFMA is leery of regulatory efforts that may overemphasize real or perceived distinctions between the interests of “long-term investors” and “short-term professional traders.” Admittedly, investors have different time horizons in terms of their investment objectives. For

²⁴ Concept Release at 3607.

²⁵ See Exchange Act Rel. No. 61908 (Apr. 14, 2010), 75 Fed. Reg. 21456 (Apr. 23, 2010) (“Large Trader Reporting Release”).

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example, an investor with a long time horizon generally is likely to be less concerned with short-term volatility in a stock, whereas an investor with a short time horizon is apt to be more concerned about short-term price movements than the long-term performance of that stock. However, we believe that the interests of long-term investors and professional traders are, in fact, aligned more often than might be assumed and, where they differ, as described above, the nature of each investor's trading interest is not necessarily incompatible with the other. For example, the ability of a long-term investor to purchase or sell a security is dependent on available market liquidity, whether provided by long-term or short-term investors. As noted by the Commission itself, much of the liquidity in today's market – available to professional traders and long-term investors alike – is attributable to professional traders.

2. Risk Management – Market Access

SIFMA recognizes that the volume and rate of message traffic associated with HFT may pose enhanced financial, regulatory, and other risks to broker-dealers and trading markets. Therefore, as a general matter, we support the use of pre- and post-trade controls on market access, and the general principle underlying the SEC's proposed Rule 15c3-5 that such controls and procedures are appropriate in market access arrangements. However, if proposed Rule 15c3-5 is to be effective, certain significant, complex issues regarding market access must be addressed before the SEC adopts the rule.

As discussed in greater detail in SIFMA's separate comment letter regarding the proposed rule,²⁶ we believe that proposed Rule 15c3-5 does not appropriately distinguish market access arrangements involving multiple broker-dealers, each of which undertakes a different role in a transaction. In certain circumstances, the broker-dealer providing market access may not be in the best position to control financial and regulatory risks associated with the relevant transactions, or financial and regulatory controls may already be assumed by other broker-dealers involved in the transaction. For example, an introducing broker-dealer may route its customer orders to an exchange through a broker-dealer that provides it access, and may clear those orders through a separate clearing broker. The SEC also should clarify that nothing in proposed Rule 15c3-5 precludes the continued application of self-regulatory organization ("SRO") guidance that requires broker-dealers to apply risk controls and procedures to orders that are sent to non-exchange and non-ATS trading venues or to internal ATS venues.

In addition, because many broker-dealers rely on third-party risk management technology, the SEC should clarify that a third-party vendor may control the underlying software of such risk management technology, so long as the broker-dealer is able to control the software's applied

²⁶ See Letter from Ann Vleck, Managing Director and Associate General Counsel, SIFMA, to Elizabeth M. Murphy, Secretary, SEC (Apr. 16, 2010) (regarding risk management controls for broker-dealers with market access). SIFMA's comment letter also asks the SEC to clarify certain issues regarding capital and credit thresholds required under the proposed rule, how broker-dealers can comply with the proposed CEO certification requirement, and that the SEC and SROs should examine firms with a view to improving procedures rather than treating any trading error as a violation of the rule per se, as well as to recognize in any adopting release the difficulty of and limits involved in monitoring for duplicate orders.

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parameters and thresholds. The SEC also should clarify that such permitted third-party software includes that provided by exchanges and ATSS,²⁷ given that market centers currently do and should continue to play a significant role in monitoring risk management compliance. Market centers are particularly well suited to apply certain pre-trade controls to order flow, such as trading halts, clearly erroneous orders, and orders not reasonably related to the market.

SIFMA also is concerned that the rule as proposed could be interpreted to require a firm providing market access to have access controls and procedures reasonably designed to prevent the entry of orders that are manipulative or based on inside information. The SEC should clarify that broker-dealers providing market access would not be liable for regulatory requirements only tangentially related to market access, such as margin, or violative behavior such as manipulative trading, insider trading, or other fraudulent activity.

B. Undisplayed Liquidity

The terms “undisplayed” or “non-displayed” liquidity are used to encompass a wide variety of trading interest. Non-displayed trading interest includes some exchange and ECN orders (including exchanges and ECNs that permit members or subscribers to limit the display of some or all of the quantity of an order), ATS orders (ATSs accept orders that are not displayed to subscribers or non-subscribers), working orders of buy side or institutional investors, and working orders and capital commitment trades of broker-dealers. Displayed liquidity, on the other hand, includes the consolidated quote and the NBBO, quotes on the Alternative Display Facility (“ADF”), and depth of book data offered by certain market data vendors or exchanges and ECNs that shows all of a market center’s bids and offers.²⁸ As the SEC is aware, non-displayed liquidity venues often are used by market participants seeking to avoid adverse market impact when executing their trades.

SIFMA does not believe the evidence demonstrates that the availability of non-displayed liquidity venues has, in fact, impaired price discovery or execution quality. To the contrary, as described above, display markets remain healthy. We note, for instance, the prevalence of very narrow spreads in NMS stocks, indicating that effective and efficient price discovery is occurring in the public markets.²⁹ In addition, by protecting the top of book of trading centers, the OPR is an effective supplement to the duty of best execution in policing execution quality. Such studies also indicate there have been improvements in depth of book display beyond the NBBO.³⁰

²⁷ For example, the NYSE’s Risk Management Gateway, at <http://www.nyse.com/technologies/tradingsolutions/1227870669701.html>.

²⁸ See SIFMA paper on Displayed and Non-Displayed Liquidity, Aug. 31, 2009, at www.sifma.org.

²⁹ See O’Hara at 19, *supra* note 9 (“In the post-Reg NMS world, effective spreads are extremely low, with average spreads in the 3–4 cent range. Turning to our specific hypothesis, the data show that effective spreads are lower in the fragmented sample on average by .29 cents with median spreads lower by .11 cents.”).

³⁰ See Angel at 15, *supra* note 11. Notwithstanding these research findings, as discussed herein, SIFMA believes that steps can and should be taken to extend the benefits of enhanced market data to retail investors at a reasonable cost.

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These trends have occurred concurrent with the growth of ATSs – which have offered significant opportunities for price improvement to their end users, including firms representing retail investors – as a percentage of all non-displaying liquidity venues. We note that some market participants have identified recent empirical evidence suggesting a possible migration trend in execution volumes from displayed to non-displayed markets,³¹ but that the most recent studies we have seen do not discuss any adverse market impact resulting from this trend. We note also that, given the changes in the markets as a result of non-displayed liquidity, there is no current evidence to suggest that non-displayed liquidity would become displayed liquidity should the use of non-displaying trading venues be restricted. Nevertheless, we encourage the SEC to conduct its own study on whether these observations are representative of longer term material changes, and, if so, whether they have a detrimental impact on market quality.

C. Trade-At Proposal

The Concept Release asks whether, if commenters believe that the quality of public price discovery has been harmed by non-displayed liquidity, the Commission should consider a “trade-at” rule. Such a rule would prohibit any trading center from executing a trade at the NBBO unless the trading center was displaying that price at the time it received the incoming contra-side order. The trade-at rule would require a trading center not displaying at the NBBO at the time it received an incoming marketable order either to execute the order with significant price improvement (e.g., the minimum allowable quoting increment), or route intermarket sweep orders (“ISOs”) to the full displayed size of NBBO quotations and then execute the balance of the order at the NBBO price.³²

SIFMA strongly opposes the concept of a trade-at rule. Initially, and in response to the Commission’s threshold question, such a rule is not warranted given the health of our markets (described above) and, importantly, the absence of compelling evidence that non-displaying trading venues are impairing public price discovery. A trade-at rule would likely lead to a deluge of additional message traffic and increased incidence of flickering quotes. The added costs to trading centers and broker-dealers would likely be significant and it is not clear that the anticipated benefits of additional quotes at the inside would outweigh them.

We also believe that a trade-at rule would have significant adverse consequences for investors, and retail investors in particular. Competition with respect to other best execution factors – such as market depth, reliability, and liquidity guarantees – would fall largely by the wayside under a trade-at rule that effectively dictates the manner in which broker-dealers must trade. For

³¹ See, e.g., Rosenblatt Securities Inc., *Trading Talk: Market Structure Analysis & Trading Strategy – Let There Be Light* (Apr. 27, 2010) (indicating that non-displayed trading volume has increased while displayed trading volume has decreased during February and March, 2010); compare Erik Sirri, Keynote Speech at SIFMA 2008 Dark Pools Symposium (Feb. 1, 2008), at <http://www.sec.gov/news/speech/2008/spch020108ers.htm> (“The bottom line is that the volume percentage of dark pools of liquidity operated by dark ATSs and broker-dealer internalizers has remained [the same]...”).

³² Concept Release at 3613.

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example, broker-dealers executing orders internally currently may provide a customer with faster executions along with opportunities for price improvement. By contrast, a trade-at rule might instead require that same order to be routed out, both slowing the execution of the customer's order and, potentially, causing the customer to miss the market and lose the opportunity for price improvement. In addition, a broker-dealer routing an order to an away trading center may well incur additional costs in the form of fees for accessing the liquidity of the away market. These fees, ultimately, may be passed on to customers. Price competition among trading centers would be significantly hindered by a trade-at rule. A trade-at rule would require certain quotes to be hit in various trading centers, which in turn would reduce the incentive for trading centers to provide lower cost executions by, for example, lowering access fees.

More fundamentally, a trade-at rule would stifle innovation, making it less feasible for new business models that have been introduced into the markets during the last decade to exist, to the detriment of all investors. For example, the rule would significantly impact the ability of investors, including long-term investors, to use non-displaying trading venues to handle sensitive order flow. The requirement that such a trading venue offer price improvement at least in the amount of the minimum increment to execute orders when the operator of the venue is not quoting at the NBBO would be difficult to meet given that many stocks trade in penny increments. Alternatively, the routing of ISOs to the full displayed size of NBBO quotations would subject such venues to access fees in away markets and significantly reduce the ability of non-displaying venues to offset customer orders.

Routing under a trade-at rule also might increase the chance of information leakage, signaling to other market participants the possibility of additional order flow at the non-displaying trading venue, thereby disrupting attempts of institutional investors to reduce implicit costs associated with large orders. While order routing is required in some circumstances under the OPR, the risk of information leakage is ameliorated somewhat by the promotion of the regulatory policy of not allowing a *better* priced limit order to be bypassed, and thus the fact that the routed order receives a *better* price as a result of the routing. In addition, investors who prefer not to have their orders displayed or routed could miss execution opportunities should potential contra-side liquidity have to be routed away to comply with a trade-at rule.

In sum, a trade-at rule would have detrimental effects on the speed and cost of executions, the liquidity currently available in the market, and the ability of investors to control their trading interests. It would undercut best execution by dictating a particular manner of trading, which we think is unnecessary given the recent performance of the equity markets. In doing so, the rule would extend well beyond even the OPR in its clear preference of investors who display orders over investors who decide it is in their best interest not to display some or any of their orders – even if they may be willing to execute at the same price as the displayed markets. In this respect, a trade-at rule comes very close to a consolidated limit order book or “CLOB.” Both would negate the competitive benefits of dispersed order flow and unnecessarily impede investor

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choice. We note that the SEC has considered a trade-at rule or CLOB in the past and determined that such restrictive trading measures were unnecessary.³³

D. Potential for Sub-Penny Pricing

Noting that a penny spread on a low-priced stock provides a greater incentive for internalization, the Commission asks whether it should consider reducing the minimum trading increment under Rule 612 for low-priced stocks. Currently, Rule 612 precludes exchanges, associations, ATSSs, and broker-dealers from displaying, ranking, or accepting bids, offers, or orders in NMS stocks in prices less than a penny if the bid, offer, or order is priced equal to or greater than one dollar per share. Conversely, market participants may display, rank, or accept bids, offers, or orders priced less than one dollar per share in increments as small as \$0.0001.

SIFMA continues to believe that quoting in sub-penny increments would not contribute to the maintenance of orderly markets. Sub-penny pricing would encourage market participants to “step ahead” of competing limit orders by submitting an order with an economically insignificant price enhancement to gain execution priority. Currently, in order to step ahead of a competing limit order, a market participant needs to post an order for 100 shares at a full penny better than the existing order. This offers a full dollar of price improvement to the putative liquidity taker of a round lot and provides meaningful economic value in order to achieve price priority for incoming market orders. If sub-penny quoting were permitted, for example, such that an order could step ahead based on a price only .001 higher than a competing order, the resulting price improvement would be only ten cents. SIFMA believes that attaining priority for such a low amount would reduce the incentive for liquidity providers to publish limit orders. It also would negatively impact the utility of order priority rules such as the OPR. Increasing the number of pricing points at which market participants may trade and, as a related matter, reducing the costs associated with gaining price priority to a level that is not meaningful predictably will lead to even greater amounts of orders and flickering quotes in today’s automated trading environment. Sub-penny pricing also would decrease the depth available at the best displayed prices, rendering the NBBO less effective in reflecting true trading interest. Decreased depth at each price in turn would require multiple transactions at multiple prices to complete an order, which would increase the cost and difficulty of completing a trade.

In addition, sub-penny pricing would pose both operational risks and technological challenges. The ability of firms to enter prices to three or more decimal places increases the likelihood of human error with very little pricing advantage gained, creating additional operational risk. We also assume that sub-penny pricing would be permitted, if at all, for a subset of securities determined by price, volume, available liquidity, or other factors. Permitting a greater degree of sub-penny quotations for such a subset of securities and taking into account these various and potentially variable factors would require significant systems recoding, increasing both operational risk and cost for all market participants without providing commensurate significant price improvement. The proliferation of quotes also would create systems capacity problems – for instance, it would be difficult to view and keep track of quotes if the number of quotes

³³ See Market Fragmentation Release at 10587-88.

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available in a given stock increased by a factor of ten. SIFMA notes that, in the options markets, for example, the data rates increased so significantly in the options penny pilot that options exchanges needed to develop quote mitigation strategies to limit the amount of data generated.³⁴

Sub-penny pricing also has implications in light of the existing “maker-taker” fee structures of various markets, discussed below. Sub-penny pricing would be particularly problematic in the event market participants were to earn maker-taker rebates in excess of the spread for a stock. Such a fee structure could incentivize market participants to aggressively place orders in expectation of collecting a rebate without regard to the quality of the execution received. Thus, should the Commission consider sub-penny pricing for stocks priced higher than one dollar, it also needs to consider access fees and maker-taker rebate incentives and their potential effect on rebate arbitrage and execution quality.

E. Maker-Taker Pricing/Rebates, Access Fees, and Liquidity Fees

Some SIFMA members have expressed concern that market pricing models and rebates have had a significant impact on market structure and should be studied further by the Commission. For example, concerns have been raised that “maker-taker” pricing subsidizes professional traders using co-location and direct data feeds at the expense of retail and long-term investors. It appears that the bulk of the maker-taker rebates for adding liquidity are paid to firms engaged in HFT. A high rebate often implies a higher taker charge,³⁵ which is in turn paid by long-term investors either directly, or indirectly through increased costs on their executing broker-dealers that, ultimately, are passed through to them. Maker-taker pricing also has been said to distort economic spreads. For instance, for stocks trading in penny increments, a taker fee can represent up to a 50-60 percent mark-up from displayed prices. As a result, broker-dealers increasingly spend significant resources analyzing the impact of taker fees on execution quality. In order to allow for an objective assessment of this and related issues, SIFMA believes the Commission should conduct a study regarding the impact of maker-taker pricing on order routing, execution practices, and market quality.³⁶

The Concept Release notes that retail order flow typically is sent to OTC market makers pursuant to payment for order flow (“PFOF”) arrangements.³⁷ SIFMA does not believe that PFOF arrangements are the primary drivers of routing decisions; instead, we believe that routing

³⁴ See, e.g., Max Bowie, *Is Sub-Penny Pricing Just Common Cents?* (Feb. 1, 2010). See also Exchange Act Rel. No. 55162 (Jan. 24, 2007), 72 Fed. Reg. 4738 (Feb. 1, 2007) (approving proposed changes to AMEX rules regarding the option penny pilot, including a quote mitigation proposal); Exchange Act Rel. No. 55156 (Jan. 23, 2007), 72 Fed. Reg. 4759 (Feb. 1, 2007) (approving proposed changes to NYSE Arca rules regarding the option penny pilot, including a quote mitigation proposal).

³⁵ However, as the Commission notes, a trading center may have an inverted pricing structure, paying a liquidity rebate that is higher than its access fee. Concept Release at 3599.

³⁶ As part of this study, the Commission might consider a pilot program that would consist of stocks across varying price levels that could be traded only without the provision of rebates to determine the impact liquidity rebates may have on order routing, execution practices, and market quality.

³⁷ Concept Release at 3606.

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decisions more often are based on the OPR and other factors associated with particular trading venues, such as rebates and access fees. We also note that OTC market makers often are able to offer price improvement to small orders. That said, SIFMA recognizes that the total amount of PFOF paid to firms per year is not immaterial, and that it may make sense for the Commission to study whether such arrangements have had an impact on execution quality for investors.

F. Market Quality and Order Routing Data: Rules 605 and 606

The Commission has asked whether Rules 605 and 606 continue to provide useful information regarding the quality of order execution by market centers³⁸ and the routing of customer orders by broker-dealers, or whether these Rules need to be modified given changes in the markets since their adoption. More specifically, the Commission asks whether individual investors understand and pay attention to Rule 605 and Rule 606 statistics.³⁹ SIFMA believes that, in their current form, neither of these rules provides useful and meaningful comparative information to market participants, particularly individual investors, or regulators, and that the rules should be either modified or rescinded in light of market developments.

Rule 605 was adopted to improve public disclosure of the quality of executions afforded to orders by market centers.⁴⁰ The Rule requires monthly reports by market centers that include information about a market center's quality of executions on a stock-by-stock basis, including, among other statistics, how market orders of various sizes are executed relative to the public quotes, as well as information about effective spreads (the spreads actually paid by investors whose orders are routed to a particular market center). The Rule also requires market centers to disclose the extent to which they provide executions at prices better and worse than the NBBO to investors using limit orders.

One element of Rule 605 that should be amended is the timeframe by which execution quality is measured. Currently, Rule 605 reports require disclosure of execution time in tranches measured in whole seconds. In the current equity markets, in which executions occur in milliseconds if not microseconds, whole second execution quality measures do not provide useful information regarding execution speed. For instance, we understand that the Rule 605 reports of some market centers list their execution speed as "zero seconds" while others list execution speed at one second due to rounding for purposes of the Rule. Therefore, Rule 605 should be amended to take into account today's sub-second execution speeds in order to provide useful execution quality information.

Similarly, benchmarking under Rule 605 has become more complicated in recent years. Industry vendors conducting Rule 605 analyses typically base their benchmark on consolidated market

³⁸ Exchange Act Rule 600(b)(38) defines a market center as an exchange market maker, OTC market maker, ATS, national securities exchange, or national securities association. 17 C.F.R. §240.603(c).

³⁹ Concept Release at 3605-06.

⁴⁰ See Exchange Act Rel. No. 43590 (Nov. 17, 2000), 65 Fed. Reg. 75414 (Dec. 1, 2000) ("605 and 606 Adopting Release") (adopting Rules 11Ac1-5 and 11Ac1-6, renumbered pursuant to Regulation NMS as Rules 605 and 606, respectively).

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("SIP") data, whereas broker-dealers submitting execution data, including time, often use direct market data that does not have the same latency as the SIP data. The Rule 605 vendors then compare the data provided by broker-dealers with the SIP data, resulting in information likely to be inconsistent. As a result, Rule 605 should have data parameters in place to ensure more uniform benchmarking and analyses.

In addition, SIFMA is concerned about the possible disparate treatment of marketable orders in displaying and non-displaying trading venues for Rule 605 purposes. We recognize that the Commission has issued guidance regarding what constitutes a "covered order" for purposes of Rule 605 reporting, and with respect to the exclusion from Rule 605 of special handling orders, in particular.⁴¹ However, we think there may be some confusion among broker-dealers regarding whether or not resting orders routed to non-displaying trading venues must be included in Rule 605 reports.⁴² As a result, Rule 605 data may not reflect consistency in the treatment of covered orders. The Commission should consider providing additional guidance on what constitutes a covered order that takes into account changes in trading practices to promote more consistent Rule 605 data.

Similarly, there appears to be confusion among market participants about how certain types of orders should be treated for Rule 605 purposes – for instance, whether all orders in securities in which a broker-dealer makes a market should be reported (regardless of whether the broker-dealer acted as a market maker in the specific transaction reported), whether both proprietary and customer orders should be reported, or whether, for large size orders, only "parent" or both "parent" and "child" orders should be reported. Therefore, Rule 605 should be modified to clarify the types of orders that are within its ambit to ensure that Rule 605 requirements are clear to market participants and that Rule 605 data is consistent and useful to routing broker-dealers and investors. Also, as noted above, market access fees have become a significant focus in order routing determinations. SIFMA believes that statistics regarding access fees and liquidity rebates would be useful as part of Rule 605 disclosures.

To the extent the SEC believes Rule 605 data, as modified to address the issues noted above, provides useful information regarding order execution quality, the data might be presented in a form that is more meaningful to investors. While we are cognizant that a primary purpose of Rule 605 data is to facilitate order routing determinations by broker-dealers, investors increasingly have more input into routing decisions – whether via sponsored access arrangements or otherwise. A more "user friendly" format for execution quality statistics would be helpful not

⁴¹ See, e.g., 605 and 606 Adopting Release at 75421-22; SEC Division of Market Regulation: Staff Legal Bulletin No. 12R (*Revised*): "Frequently Asked Questions About Rule 11Ac1-5," FAQ 5, *available at* <http://www.sec.gov/interp/legalsl/bim12a.htm> (explaining that "[t]he definition of covered order in paragraph (a)(8) of the Rule does not specifically identify every type of order that may fall within the 'special handling' exclusion. In general, any market or limit order for which the customer requests a type of handling that may preclude the order from being executed promptly at the current market price at the time of order receipt (subject only to a limit price) would qualify for the special handling exclusion and not be covered by the Rule.").

⁴² For instance, depending on the availability of contra-side orders in a non-displaying trading venue, marketable orders in such trading venues may not be executed for significant periods of time. Some firms have expressed uncertainty about whether such orders fall within the special handling exclusion.

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only for institutional investors, but also would aid retail investors seeking to better understand the routing decisions of their broker-dealers.

Rule 606 was adopted to improve public disclosure of broker-dealer practices with respect to the routing of customer orders.⁴³ Rule 606 requires broker-dealers that route customer orders in equity and option securities to make publicly available quarterly reports that, among other things, identify the trading venues to which customer orders are routed for execution. In addition, broker-dealers are required to disclose to customers, on request, the venues to which their particular orders were routed. Finally, the rule requires broker-dealers to disclose the material aspects of their relationships with each executing venue, including any PFOF or profit-sharing arrangements.

As with Rule 605, SIFMA is concerned that Rule 606 statistics no longer provide meaningful information to investors about order routing decisions. The primary reason is that order routing practices now are largely driven by the OPR and the requirement to fill protected quotations. In addition, and unlike when Rule 606 was first adopted, there is now a significant amount of “pinging” activity using immediate-or-cancel (“IOC”) orders. The practice of pinging makes it difficult for customers to discern when a broker-dealer has routed IOC orders to find potential liquidity from when customer limit orders are routed to post liquidity in a trading center. Although, as noted elsewhere in this letter, we do not believe pinging is detrimental to the markets, the changes in market routing practices renders Rule 606 inadequate for providing information to investors about actual order routing decisions. We do believe that there is value in disclosing broker-dealers’ potential conflicts of interest regarding order routing, but such disclosure could be provided by means other than Rule 606 reports, such as through other disclosure on broker-dealer websites.

III. Suggested Regulatory Initiatives

SIFMA believes that, going forward, the equity markets should be characterized by the same underlying principles that have led to the development of the current NMS: the existence of multiple, competing markets; efficient and effective linkages; the availability of varying forms of market data; and continued technological and financial innovation. We note, however, that certain specific improvements to the current market structure will be necessary to maintain strong, efficient, and effective equity markets.

A. Consolidated Audit Trail and Large Trader Reporting

SIFMA understands that the Commission currently is considering the utility of a consolidated audit trail, and we respectfully urge the Commission to make this a regulatory priority in the near future. A consolidated audit trail would be a significant step in improving oversight of the markets. Although FINRA’s Order Audit Trail System (“OATS”), the NYSE’s Order Tracking System (“OTS”), and the ability of the Commission to seek Electronic Blue Sheets (“EBS”) provide useful audit trail information, they do not provide regulators the benefits of a

⁴³ See 605 and 606 Adopting Release.

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consolidated audit trail. An efficient, harmonized, and market-wide regulatory audit trail would eliminate redundancy among the various SRO audit trail and surveillance requirements and systems. It also would allow better oversight of the markets as a whole, thereby helping to reduce overall market risk.

In order to be effective, a consolidated audit trail should have a single system administrator and permit market participants to report order and transaction information once, which would improve reporting efficiency and provide the administrator a holistic view of market activity. This would allow regulators to better monitor market activity and address discrete regulatory issues. An effective consolidated audit trail would entail uniform reporting rules among SROs and mandatory information sharing among SROs to provide consistency and reporting efficiency.⁴⁴

SIFMA intends to submit a separate comment letter on the SEC's large trader reporting proposal,⁴⁵ but believes that the proposal raises many of the issues discussed above regarding a consolidated audit trail and that these are worth raising, albeit briefly, in this letter. While SIFMA supports the concept of large trader reporting, we believe that the Commission's large trader reporting proposal should be part of the process of creating a consolidated audit trail, rather than a separate and preceding process that will shift regulatory focus and market participant resources away from a consolidated audit trail process. For example, we do not think it is productive to devote industry time and resources to what SIFMA believes will be a complicated and lengthy process of enhancing the EBS system and current EBS reporting to accommodate the proposed rule. Instead of undertaking this task, we believe it would be much more beneficial for the Commission and the industry to work toward the more critical goal of establishing the consolidated audit trail.

If the Commission believes that large trader reporting should be a near-term regulatory objective, SIFMA recommends alternative means of accomplishing that goal that will require less time and resource commitment and allow regulators and market participants to focus on the larger and more significant goal of developing a consolidated audit trail. For example, one option would be to require large traders to self-report currently, obtaining MPIDs or other identifying numbers in order to do so, which would provide the SEC with the information it needs without requiring the expensive and time-consuming enhancement of EBS. SIFMA continues to review the large trader reporting proposal and looks forward to providing more comments to the Commission in the near future.

B. Increased Harmonization of Disparate Regulation and Compliance Oversight

SIFMA believes that the current regulatory structure entails many conflicting or duplicative rules and regulations, regulatory initiatives, and systems programming demands. This places

⁴⁴ For example, we expect that such a consolidated audit trail would incorporate relevant Trade Reporting Facility ("TRF") reporting rules as well as the most effective elements of the OATS and OTS systems and the EBS system.

⁴⁵ See Large Trader Reporting Release.

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unnecessary burdens on regulators and market participants alike, and poses a significant risk to market efficiency as well as meaningful investor protection. We recommend that the SEC, SROs, and other market participants undertake a comprehensive review of existing market structure and trading rules to identify conflicting or duplicative requirements that could be harmonized or eliminated.⁴⁶ Although we commend FINRA and the NYSE for their work on a consolidated rulebook for the past few years, we believe that there are several trading rules that could be harmonized to provide better market efficiency without compromising investor protection. For example, the harmonization of NYSE Rule 92 and FINRA's Manning Rule has been ongoing for several years, and SIFMA believes that a single rule in this area would be most effective and efficient. More generally, SIFMA believes that a single set of trading rules would be sufficient.

In addition, the Commission, SROs, and firms must find ways to better coordinate and streamline system programming demands associated with regulatory changes. For example, current programming demands facing market participants include FINRA's Related Market Center identifier, Nasdaq's sponsored access rule (as well as any other market access rules that are approved),⁴⁷ short sale regulation requirements, including the newly-adopted price test,⁴⁸ FINRA's OTC consolidated quote facility,⁴⁹ symbology changes,⁵⁰ and business-related programming requirements such as the DirectEdge exchanges, the Nasdaq OMX PSX exchange, and the BATS exchange, all of which are scheduled currently to go live in 2010. Systems changes have become increasingly complex, costly, and time consuming. Coordination among regulators and market participants with respect to technical specifications, implementation, and testing time periods would be a more rational and efficient approach to this urgent issue. Making coordination a higher priority would provide the Commission with a better sense of the capabilities of market participant systems and the sorts of programming changes feasible within reasonable time frames, which would enable it to better assess the programming demands of proposed SEC and SRO rulemaking. We emphasize that the primary concerns regarding such programming issues are capacity and the dedication of personnel necessary to systems

⁴⁶ See Letter from Ira D. Hammerman, Senior Managing Director and General Counsel, SIFMA, to Christopher Cox, Chairman, SEC, Nov. 25, 2008 (regarding SEC guidance concerning proposed rule changes filed by SROs); Letter from Marc E. Lackritz, President, SIFMA, to Jonathan G. Katz, Secretary, SEC, Mar. 9, 2005 (regarding the SEC's SRO governance and transparency proposal and self-regulation concept release) (together, the "SRO Letters").

⁴⁷ Exchange Act Rel. No. 61345 (Jan. 13, 2010), 75 Fed. Reg. 3263 (Jan. 20, 2010).

⁴⁸ See fn. 2.

⁴⁹ Exchange Act Rel. No. 60999 (Nov. 13, 2009), 74 Fed. Reg. 61183 (Nov. 23, 2009).

⁵⁰ See, e.g., Options Clearing Corporation Information Memo #26905 (Jan. 25, 2010) (describing changes to option contract adjustment methodology and symbol conventions to become effective with the implementation of the Options Symbology Initiative); NYSE/Euronext Information Memo (Nov. 4, 2009) (announcing NYSE AMEX's commencement of Nasdaq symbol trading and testing schedule); Nasdaq OMX Equity Trader Alert #2010-1 (Jan. 13, 2010) (notifying market participants of required changes to specifications regarding equity symbology in response to the NYSE's announced intention to begin listing and trading companies using 5-character root symbols.).

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development and quality assurance to ensure that programming changes do not strain the capacity or functionality of the overall market structure.

SIFMA also believes the SEC should pursue greater global regulatory coordination. Given the vast array of regulatory and legislative initiatives in the US and other countries, it is critical that the collective impact of global economic growth be carefully considered, notwithstanding the merit of any individual measure. As SIFMA has previously stated, we are concerned about potential barriers to market entry, distortions to competition, and regulatory arbitrage that could result from the accelerated pace of regulatory and legislative reforms that are not considered together as part of a well-balanced and well-coordinated regulatory framework.⁵¹

C. Reliance on Empirical Data

SIFMA believes that investors, market participants, and the Commission would benefit from greater efforts to ensure that regulatory proposals are sufficiently grounded in supporting empirical data. This is particularly the case to the extent proposed regulations would reduce investor flexibility. Such data should be made publicly available so that market participants – including broker-dealers, investors, academics, and other interested parties – have the opportunity to review it and provide more fully informed responses to proposed regulations. Basing regulatory proposals on such data will help engender market confidence in any resulting final rules among market participants and investors alike. For example, before proposing significant changes to the manner of trading available in displayed and non-displayed markets, the SEC should offer empirical data evidencing the underlying bases for key regulatory concerns – namely, that public markets have been harmed by trading in non-displayed markets and that such harm outweighs the benefits offered to investors by non-displaying markets.⁵²

As technology continues to evolve and impact market structure, increased use of empirical data will be critical to developing sound regulatory policymaking. In particular, the Commission's increased attention to the potentially different interests of long- and short-term investors requires greater clarity and evidence regarding where and how such interests, in fact, diverge. Where the Commission proposes to take regulatory action based on such differences, whether they be varying time horizons for investment gains or concerns about competitive advantages in the marketplace, such proposals should be rooted in data regarding a measurable difference that exists to the detriment of long-term investors, and balancing that interest against competing market interests.

Of course, we appreciate that the Commission typically solicits data from market participants and other commenters in the course of its rule proposals. However, the limited comment period associated with many of the Commission's proposed rules often is insufficient to assemble, assess, and provide data in timely comments. And, although empirical data provided in

⁵¹ See SIFMA Press Release, SIFMA, AFME, and ASIFMA Support G20 Work to Take Stock and Assess Global Reforms, Prevent Regulatory Fragmentation, Increase FSB Transparency (Nov. 6, 2009), at www.sifma.org.

⁵² As discussed above, SIFMA does not believe there is sufficient empirical data regarding any negative market impact of non-displayed liquidity.

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comments on the Commission's proposed rulemaking is useful, we think rulemaking would be more effective if the Commission were to conduct and publish more of its own empirical analysis before proposing rules. SIFMA notes that the Commission in the past has provided data to support its rule proposals, such as for Regulation NMS.⁵³ When such empirical analysis is conducted and data is made available by the Commission in support of its rulemaking, the subsequent discussion and analysis of the proposed rulemaking is more efficient and productive.

D. Market Data Issues

As a preliminary matter, SIFMA notes that retail investors, either acting in a self-directed manner or with the assistance of a financial adviser, must rely largely on consolidated market data when making investment decisions. This is not because retail investors do not want to see meaningful liquidity – rather, it is because depth of book market data pricing generally is too expensive for the majority of retail investors. As a result, we believe it is vital that the consolidated market data currently available in the markets be significantly enhanced both in terms of the speed at which data is updated and transmitted, and in terms of the amount of data currently available. As discussed elsewhere in this letter, SIFMA does not believe that slowing the rest of the market and direct data feeds to the pace of consolidated data is an appropriate solution to disparities between retail and institutional investors' access to market data. Rather, the Commission should take steps to require or incentivize improvement in consolidated market data speed and depth without sacrificing the improvements made regarding the speed and depth of direct market data.

In addition, SIFMA believes that there should be a reasonable relation between the costs associated with producing market data and the fees charged for that market data. We remain concerned about the lack of transparency in how such fees are determined.⁵⁴ We note, for example, that the Concept Release data indicates the consolidated tape revenue is 32 times greater than expenses, and that expenses appear to be static or decreasing.⁵⁵ With faster and improved technology, market data fees should be trending downwards, rather than upwards. We believe cost-based market data fees subject to a transparent fee-setting process would result in lower market data fees. Such a fee-setting process should involve market participants and permit real challenge to the market data fees being proposed. In addition, we do not believe that market data fee rule changes should be permitted to be effective upon filing, and should instead be subject to a full notice and comment process.

The Commission has stated in the past that it agrees that the level of market data fees should be reviewed and that, in particular, greater transparency concerning the costs of market data and the

⁵³ Concept Release at 3604, fn. 55.

⁵⁴ See Letter from Marc E. Lackritz, President, SIA to Jonathan G. Katz, Secretary, SEC, Feb. 1, 2005 (regarding Regulation NMS); SRO Letters, *supra* note 46.

⁵⁵ Concept Release at 3601.

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fee-setting process is needed.⁵⁶ Because these costs are passed on to the end-user investor in one form or another, it is the investor who stands to benefit from such increased transparency. We believe the Commission needs to address this issue in the near future in order to bring market data fees in line with the true costs of providing market data.

In order to achieve the market data goals discussed above, SIFMA believes that the SEC should facilitate greater competition regarding market data. One approach would be to establish a competing consolidator model for market data. Such a model would, for example, allow the individual SIPs to handle all symbols, and then permit each of them to compete on price and market data performance according to defined metrics established to ensure market data quality. A competing consolidator model would incentivize SIPs to provide public market data in the most cost effective way, and ensure market data quality by requiring SIPs to compete for market share. It might even encourage the entrance of a new SIP not controlled by the exchanges. Alternatively, the Commission could amend the so-called display rule that requires SIPs and broker-dealers to purchase and provide consolidated market data to their customers at the point of trade decision,⁵⁷ and instead, or as an alternative, permit individual broker-dealers to purchase direct data feeds from exchanges and consolidate the data themselves. Either approach would remove, in part, the government-mandated monopoly that each SIP enjoys today, putting pressure on the SIPs to improve their service, contain their costs, and begin to compete on price.

Should the SEC not establish a competing consolidator model or amend the display rule as noted above, at a minimum, it should require a more harmonized approach on market data rules and a single uniform agreement among tape associations to create a more efficient means of accessing public market data. Currently, the SIPs have differing regulatory and operational infrastructures that unnecessarily complicate market participants' access to their market data. For example, there is not a uniform market data agreement, so market data subscribers must use multiple and often differing agreements with market data providers. Such agreements may have multiple standards and definitions (e.g., what constitutes a "professional"), making coordination and compliance with the various standards difficult and time consuming in terms of personnel and back office support. This effort could be significantly streamlined with more uniformity among SIP requirements.

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⁵⁶ Exchange Act Rel. No. 50870 (Dec. 16, 2004), 69 Fed. Reg. 77424, 77461 (Dec. 27, 2004) (proposing Regulation NMS).

⁵⁷ Exchange Act Rule 603(c), 17 C.F.R. §240.603(c).

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SIFMA appreciates this opportunity to comment on the issues raised in the Concept Release, as well as to offer its thoughts on other market issues and market structure principles. We look forward to further discussions about specific regulatory initiatives and equity market structure more generally with the Commission and its staff. If you have any comments or questions, please do not hesitate to contact me at 202.962.7300.

Sincerely,

Ann Vlcek
Managing Director and Associate General
Counsel
SIFMA

cc: Mary L. Schapiro, Chairman
Luis A. Aguilar, Commissioner
Kathleen L. Casey, Commissioner
Troy A. Paredes, Commissioner
Elisse B. Walter, Commissioner
Robert W. Cook, Director, Division of Trading and Markets
James Brigagliano, Deputy Director, Division of Trading and Markets
David Shillman, Associate Director, Division of Trading and Markets
Daniel Gray, Market Structure Counsel, Division of Trading and Markets



June 25, 2010

By Electronic Mail (rule-comments@sec.gov)

Ms. Elizabeth M. Murphy
Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: Market Structure Roundtable; File No. 4-602

Dear Ms. Murphy:

The Securities Industry and Financial Markets Association (“SIFMA”)¹ welcomes the opportunity to comment on the range of issues raised during the Securities and Exchange Commission’s (“SEC” or “Commission”) Market Structure Roundtable. The following comments add to and complement the comments SIFMA has submitted on the SEC’s recent market structure Concept Release² as well as the SEC’s various market structure rule proposals, including those related to market access,³ non-public trading interest,⁴ consolidated audit trail,⁵ and large trader reporting.⁶ We appreciate the Commission’s commitment to improving the national market system, and look forward to a continued dialogue with the Commission as it examines the equity markets and their regulation.

¹ The Securities Industry and Financial Markets Association (“SIFMA”) brings together the shared interests of hundreds of securities firms, banks and asset managers. SIFMA’s mission is to support a strong financial industry, investor opportunity, capital formation, job creation and economic growth, while building trust and confidence in the financial markets. SIFMA, with offices in New York and Washington, D.C., is the U.S. regional member of the Global Financial Markets Association (“GFMA”). For more information, visit: www.sifma.org.

² Securities Exchange Act Rel. No. 61358 (Jan. 14, 2010), 75 Fed. Reg. 3594 (Jan. 21, 2010); Letter from Ann Vleck, SIFMA, to Elizabeth M. Murphy, SEC re: Concept Release on Equity Market Structure (Apr. 29, 2010) (“SIFMA Concept Release Letter”).

³ Securities Exchange Act Rel. No. 61379 (Jan. 19, 2010), 75 Fed. Reg. 4007 (Sept. 23, 2009); Letter from Ann Vleck, SIFMA, to Elizabeth M. Murphy, SEC re: Risk Management Controls for Brokers or Dealers with Market Access (Apr. 16, 2010) (“SIFMA Market Access Letter”).

⁴ Securities Exchange Act Rel. No. 60997 (Nov. 13, 2009), 74 Fed. Reg. 61208 (Jan. 23, 2009); Letter from Ann Vleck, SIFMA, to Elizabeth M. Murphy, SEC re: Regulation of Non-Public Trading Interest (Feb. 18, 2010).

⁵ Securities Exchange Act Rel. No. 62174 (May 26, 2010), 75 Fed. Reg. 32556 (June 8, 2010) (“CAT Release”); SIFMA Concept Release Letter at 18-19.

⁶ Securities Exchange Act Rel. No. 61908 (Apr. 14, 2010), 75 Fed. Reg. 21456 (Apr. 23, 2010) (“Large Trader Release”); Letter from Ann Vleck, SIFMA, to Elizabeth M. Murphy, SEC re: The Large Trader Reporting System (June 24, 2010) (“SIFMA Large Trader Reporting Letter”).

A. Preventing Price Gaps and Erroneous Trades

The market disruption of May 6th highlighted the need to prevent price gaps and erroneous trades. The preliminary report (“Report”) of the Commission and the Commodity Futures Trading Commission (“CFTC”) regarding the events of May 6th points to a variety of often inter-related potential causes for the “temporary, breakdown in the market’s price setting function when a number of stocks and ETFs were executed at clearly irrational prices.”⁷ We encourage the Commission to clarify the responsibility of trading venues to prevent price gaps and erroneous trades from occurring, thus reducing the need for declaring halts.

1. Stock-by-Stock Circuit Breaker Rules

The events of May 6th also highlighted inconsistencies regarding the circumstances in which trading may be paused in the various markets. The SEC responded quickly by approving stock-by-stock circuit breakers that pause trading in S&P 500 stocks across all U.S. equity markets for a five-minute period in the event that the stock experiences a 10 percent change in price over the preceding five minutes.⁸ SIFMA supports these rules as a first step in addressing the structural issues highlighted on May 6th. However, we would encourage the SEC to ensure that all trading pause rules are the same across all markets going forward.

a. Expansion of Stock-by-Stock Circuit Breaker Rules

As noted, the stock-by-stock circuit breaker rules are limited in scope, as they only apply to the stocks in the S&P 500. We encourage the SEC to act expeditiously – and in advance of the conclusion of the 6-month pilot period – to expand the scope of the rules to other securities, particularly ETFs.⁹ In this regard, we note that ETFs experienced significant volatility on May 6th and also would benefit from uniform pauses in trading.¹⁰ We are also concerned that, as the pilot is expanded to more symbols, the current circuit breaker parameters will not be appropriate for low priced securities. We therefore suggest that securities priced below \$5.00 be excluded from coverage under the pilot. Finally, we support further analyses of the linkages between the various financial markets; specifically, the SEC should continue to work with industry participants to explore how circuit breaker trading pauses should be treated across related markets, including the options and futures markets.

⁷ SEC Approves New Stock-by-Stock Circuit Breaker Rules, SEC Press Release 2010-98 (June 10, 2010) (“Circuit Breaker Press Release”).

⁸ See Securities Exchange Act Rel. No. 62251 (June 10, 2010), 75 Fed. Reg. 34183 (June 16, 2010) (approval of FINRA single stock circuit breaker); Securities Exchange Act Rel. No. 62252 (June 10, 2010), 75 Fed. Reg. 34186 (June 16, 2010) (approval of equity exchanges’ single stock circuit breaker rules).

⁹ See Circuit Breaker Press Release (stating SEC’s intention to expand the circuit breaker rules to other securities).

¹⁰ Preliminary Findings regarding the Market Events of May 6th 2010, Report of the Staffs of the CFTC and SEC to the Joint Advisory Committee on Emerging Regulatory Issues (May 18, 2010) (“May 6th Report”) at 5-6.

b. Single Uniform Intermarket Trading Pause Rule

Various exchanges and FINRA have or are contemplating their own unique volatility rules that would permit those markets to halt trading in their markets under circumstances other than those set forth in the recently adopted stock-by-stock circuit breaker rules. For example, the NYSE's trading system incorporates liquidity refreshment points ("LRPs"), which, when one is triggered, pauses trading for a time to permit additional liquidity to enter the market.¹¹ Similarly, Nasdaq has proposed expanding its Volatility Guard rules which are similar to the NYSE LRPs.¹² SIFMA is concerned that, as noted in the SEC's preliminary report on the May 6th events, the imposition of disparate volatility rules may have the effect of exacerbating, rather than dampening, price volatility since orders may be routed to other, less liquid venues for immediate execution rather than waiting out the pause in trading.¹³ In light of these concerns and the general need for regulatory consistency, SIFMA believes that a single, uniform intermarket rule should govern such stock-by-stock trading pauses and that any market-specific volatility rules should be eliminated.

2. Other Methods for Preventing Price Gaps and Erroneous Trades

SIFMA encourages the SEC to evaluate whether methods other than, or in addition to, trading halts would better serve the markets in limiting price gaps and erroneous trades. In particular, SIFMA believes that the following approaches are worth further consideration. These approaches would virtually eliminate the need to halt a security due to aberrant trading.

a. Limit Up/Down Approach

The SEC should consider the benefits of a "limit up/down" approach to controlling trading during volatile markets, similar to that utilized in the futures markets. In the futures markets, certain instruments may only trade within established price bands that are based on the prior day's close, known as limit up and limit down. Applying this concept to the securities context, once a designated stock price threshold is reached, trading could still continue but only within appropriate pre-set limits. Such an approach would largely eliminate erroneous trades and minimize the costs associated with interrupting continuous trading and denying market participants access to a continuous flow of market data during critical periods of time while still ensuring orderly market conditions. The key to the proper functioning of a limit up/down approach, of course, is the adoption of the correct trading band for various securities. We encourage consideration being given to establishing thresholds based upon market frequency (similar to the current single stock circuit breaker triggers) as opposed to using a static prior night's close. SIFMA encourages the Commission to compare the relative merits of this limit up/down approach with those associated with the use of circuit breakers.¹⁴

¹¹ See NYSE Rule 1000.

¹² See SR-NASDAQ-2010-0066.

¹³ May 6th Report at 4.

¹⁴ We note that, if implemented effectively, the limit up/down approach would eliminate the possible need for market collars and the need to regulate stub quotes, as discussed below.

b. Collars on Market Orders

As the SEC described in its Report, some of the most inexplicable executions on May 6th resulted from the use of market orders during the period of extreme volatility.¹⁵ As we saw, an unusually large influx of such orders can quickly use up all available liquidity across all markets, resulting in orders breaking through many price levels in an effort to obtain an execution at any price. SIFMA does not believe that the SEC should prohibit the use of market orders; such orders remain a valuable tool for investors seeking immediate liquidity, notwithstanding the risks associated with their use during volatile trading periods. However, the SEC should consider ways to minimize the risks related to the use of market orders, including their potential to contribute to sudden price moves. In this regard, SIFMA encourages the SEC to pursue initiatives to educate investors about the risks of market orders. In addition, the SEC should consider whether the imposition of collars on market orders would provide benefits to investors, or would detract from the trading flexibility that investors currently enjoy. We note that, like the limit up/down approach, the efficacy of market order collars would depend on the ability to establish the correct benchmark for the collar.

c. Stub Quotes

Stub quote executions were another source of erroneous trades on May 6th. As nominal quotes entered by market makers to meet their two-sided quote requirements, stub quotes are not intended to indicate actual trading interest. As a result, SIFMA recommends the elimination of stub quotes. Instead, we would encourage the SEC to consider other auto-quoting mechanisms, including establishing collars on quotes,¹⁶ or material incentives for market makers to maintain their quotes.

B. Market-Wide Circuit Breakers

None of the existing market-wide circuit breakers, which apply across all equity trading venues and futures markets, were triggered by the events of May 6th. We support the SEC staff's efforts to evaluate how the market-wide circuit breakers should be recalibrated to be effective in today's fast paced electronic trading environment. In particular, the SEC should analyze how often the triggers have been hit, how often they should have been hit, and whether limitations on trading short of a trading pause may be beneficial under certain circumstances, and then introduce a reasonable proposal based on that data. Any modifications, however, should be coordinated between the securities and futures markets.

¹⁵ Id. at 75.

¹⁶ In considering such measures, the SEC should evaluate the potential impact on message traffic in the marketplace to mitigate inefficiencies.

C. Market Center Obligations

1. Accurate and Accessible Market Data

SIFMA believes that it is critical for market centers to ensure that their market data is both accurate and accessible. Market centers should establish mechanisms for checking, verifying and reporting their market data. In doing so, they should have the means to handle their order flow so as to avoid redundant prices and extraneous prints. Moreover, rules applying any clearly erroneous policy should be very limited; permitting trades at an inappropriate price caused by preventable market data issues and addressing this problem by later breaking the trade should not be permitted. This is particularly troubling in light of the fact that, in many instances, trades do not occur in isolation. For example, broker-dealers may enter hedging or other offsetting transactions based on another trade in both the equities and derivatives markets. Thus, breaking one aspect of such related transactions as clearly erroneous but not the other may have significant consequences for firms. Finally, the market center's market data procedures should require the market center to pull its quote, or group of affected quotes when applicable (e.g., a given letter range), if the data becomes delayed, inaccessible or otherwise inaccurate.

2. Clearly Erroneous Policies

SIFMA supports the SEC's recent efforts to clarify the equity exchanges' and FINRA's processes for breaking erroneous trades.¹⁷ We applaud the decision to curtail the markets' discretion in breaking erroneous trades and to impose uniform rules for breaking such trades. We urge the SEC, the exchanges and FINRA, however, to continue to work to ensure uniformity and consistency in the application of their clearly erroneous policies. In addition, we believe that the options exchanges should handle erroneous trades in a manner consistent with the equity markets. SIFMA looks forward to reviewing the SROs' recently proposed clearing erroneous trade rules.

3. Invocation of Self-Help

The SEC has identified the self-help remedy as another potential contributor to the May 6th market disruption.¹⁸ Exchanges are entitled to exercise the self-help remedy under the Order Protection Rule when another exchange repeatedly fails to respond within one second. A declaration of self-help frees the declaring exchange from its obligation to route orders to the affected exchange. The self-help remedy was invoked against NYSE Arca during the disruption, thereby further limiting the available liquidity (although the provision of liquidity may have been

¹⁷ See Securities Exchange Act Rel. No. 62333 (June 21, 2010) (NYSE proposal); Securities Exchange Act Rel. No. 62331 (June 21, 2010) (NSX proposal); Securities Exchange Act Rel. No. 62336 (June 21, 2010) (CHX proposal); Securities Exchange Act Rel. No. 62337 (CBSX proposal); Securities Exchange Act Rel. No. 62341 (June 21, 2010) (FINRA proposal); Securities Exchange Act Rel. No. 62334 (June 21, 2010) (NASDAQ Proposal); Securities Exchange Act Rel. No. 62330 (June 21, 2010) (ISE proposal); Securities Exchange Act Rel. 62340 (June 21, 2010) (BATS proposal); Securities Exchange Act Rel. No. 62338 (June 21, 2010) (EDGA proposal); Securities Exchange Act Rel. No. 62339 (June 21, 2010) (EDGX proposal); Securities Exchange Act Rel. No. 62342 (June 21, 2010) (NASDAQ OMX BX proposal); Securities Exchange Act Rel. No. 62332 (June 21, 2010) (NYSE Amex proposal). See also SEC to Publish for Public Comment Proposed Rules for Clearly Erroneous Trades, Press Release 2010-104 (June 17, 2010).

¹⁸ May 6th Report at 5.

impaired in any event in light of apparent system issues at NYSE Arca). In light of the significant effect of declaring self-help – that is, the loss of liquidity of an entire market, SIFMA encourages the SEC to carefully analyze how it could tighten the self-help process by imposing uniform standards on when and how self-help may be utilized. For example, we would advocate more specific and uniform standards for when a market may invoke self-help on its own behalf as well as when one market may declare self-help against another market. Additional procedures should govern, at a minimum, how long the self-help period will last, how markets should be contacted, how market participants should be alerted to self-help being invoked, and how the self-help period will end. Indeed, the SEC may wish to consider the value of independent evaluations of the accessibility of the exchanges' quotes, both in real-time as well as in connection with self-help declarations.

4. Additional Market Center Disclosure

SIFMA believes that market participants would benefit from additional disclosures from market centers about their trading arrangements and practices. Such information would provide valuable information to market participants seeking to obtain best execution.¹⁹

5. ATS vs. Exchange Issues

More recently, there have been discussions about the extent to which alternative trading systems ("ATSs") may have more flexibility to engage in various practices than national securities exchanges. SIFMA believes the SEC should consider this issue, as well as others involving the relative costs and benefits of exchange vs. ATS designation, and whether the balance between these market centers is appropriate or needs to be adjusted. In doing so, the SEC should take into account differences between ATSs that operate as electronic communication networks, and those that operate as non-display trading venues. Moreover, any such assessment needs to be balanced and should not focus solely on benefits accruing to ATSs. We note, for example, that national securities exchanges receive significant benefits not available to ATSs, including benefits related to the use and sale of market data, lower clearing costs and no net capital requirements.

D. Market Maker Obligations

1. Definition of Market Maker

With the rise of high frequency trading, some have questioned whether the definition of a market maker should be expanded to include certain high frequency traders in light of some of the possible advantages such traders enjoy. As discussed in our comment letter on the SEC's Concept Release, SIFMA does not believe that there is a need to redefine a "market maker" at this time or to impose market maker obligations on high frequency traders.²⁰ It may, however, be useful for the Commission to consider how to better promote market liquidity by incentivizing market makers.

¹⁹ For a more detailed discussion, see SIFMA Concept Release Letter at 7.

²⁰ See SIFMA Concept Release Letter at 7.

2. Market Maker Obligations

As the events of May 6th highlighted, the current market maker obligations do not operate to ensure liquidity, particularly in volatile markets. SIFMA encourages the SEC to consider how best to enhance liquidity in those moments when it is most needed. The SEC should work with the exchanges to improve market maker auto-quoting mechanisms to better provide liquidity in times of duress (e.g., imposing collars on quotes). In addition, the SEC and the self-regulatory organizations should ensure that market makers are making appropriate use of their market making privileges (e.g., relying on their short sale exemption only if they are providing liquidity). The SEC also should consider more generally ways to ensure that liquidity does not flee the market, as discussed above, rather than looking to market makers to hold back the floodgates during volatile trading.

E. High Frequency Trading, High Speed Trading and Related Issues

SIFMA recognizes the value of high frequency trading in today's markets, particularly the significant liquidity provided to the market by such trading. However, as high frequency trading has increased, questions have arisen regarding the fairness of high frequency trading as well as the degree to which such trading exposes the equity markets to an unreasonable amount of systemic risk. As discussed in our comment letter on the equity markets Concept Release, SIFMA believes that the market would benefit from more disclosure about high frequency trading practices and how they affect the markets.²¹

1. Direct Market Data Feeds vs. Consolidated Data Feeds

SIFMA believes that it would be a significant step backward for the SEC to impose restrictions on the availability of market data or the content and transmission speed of such data. Rather than considering an approach that would slow technology or progress, the SEC should consider how to make direct market data feeds available to a broader universe of market participants, including retail investors, on fair and reasonable terms, and how to enhance the speed and content of consolidated market data. For example, the SEC might consider requiring market centers that sell their direct market data feeds to invest more heavily in ensuring that market data generated by the Consolidated Quotation System, Consolidated Tape Association and Nasdaq securities information processors is distributed efficiently, in a timely manner and with appropriately useful content.²²

²¹ For a more detailed discussion, see SIFMA Concept Release Letter at 5-11.

²² For a more detailed discussion, see SIFMA Concept Release Letter at 8.

2. Ensuring Appropriate Use of Direct Market Data Feeds

Direct market data feeds, which generally are faster and more detailed than the consolidated data feeds, provide market participants with valuable information. SIFMA notes, however, that such feeds may be used by third parties to attempt to derive more information about the markets than the providers of the data realize or intend to permit. For example, member firms state that direct market transaction information may be linked to particular displayed quotations and, in some instances, direct market data may be used to help discern the presence of reserve orders. SIFMA urges the SEC to consider whether it would be beneficial for market participants to have a better understanding of the ways in which their market data, if provided to a trading center publishing direct market data, might be used by other market participants. Better disclosure of these practices would facilitate the ability of market participants to opt-in or opt-out of the use of their data in this manner.²³ The SEC also should consider whether the level of implicit information provided by various market centers in direct market data feeds rises to a level akin to that of providing a quote or actionable indications of interest to the recipients of the data feed and, if so, what the implications of providing such data are under the SEC's Quote Rule.

3. Co-Location

SIFMA does not believe that firms participating in co-location arrangements, including the use of specialized data, lower latency data, or higher bandwidth consumption, should have affirmative or negative obligations solely as a result of such arrangements. As noted in our Concept Release comment letter, we view co-location arrangements as sufficiently distinct from exchange specialist status that such obligations are not warranted.²⁴

4. Minimum Duration for Quotes/Orders

In response to concerns about trading interest that is available for only very brief periods of time, some commenters have suggested imposing a minimum duration for quotes and orders. SIFMA opposes any such minimum duration requirements and, instead, encourages the SEC and the markets to explore other ways to incentivize longer display periods.²⁵

F. Internalization and Undisplayed Liquidity

SIFMA believes that undisplayed liquidity, including internalization practices of broker-dealers, provides genuine benefits to the markets and their participants without detracting from the overall vibrancy of the displayed markets. As the SEC is aware, non-displayed liquidity often is used by market participants seeking to avoid adverse market impact when executing their trades. In addition, internalized executions by broker-dealers, in particular, provide investors – often retail investors – with speedy executions and, frequently, price improvement, mainly

²³ For a more detailed discussion, see SIFMA Concept Release Letter at 8.

²⁴ For a more detailed discussion, see SIFMA Concept Release Letter at 7.

²⁵ For a more detailed discussion, see SIFMA Concept Release Letter at 9.

because broker-dealers retain control over the order execution process. Moreover, internalized orders that are not executed immediately are subject to display obligations where appropriate, thereby furthering the national quotation system. We note also that there is no current evidence to suggest that non-displayed liquidity would become displayed liquidity should the use of non-displaying trading venues be restricted.²⁶ In fact, it is possible that restricting the use of non-displayed trading venues would reduce the overall amount of available liquidity in the marketplace at any given time.

Indeed, the most recent studies we have seen – including a study concluded subsequent to the close of the Concept Release comment period – demonstrate that the availability of non-displayed liquidity venues have not, in fact, adversely impacted the displayed markets by impairing price discovery or execution quality. To the contrary, displayed markets remain healthy. For example, a very recent working paper on the impact of dark pools on market quality concludes that “a higher amount of dark pool activity is associated with lower quoted and effective spreads, lower price impacts, and lower short-term volatility. In other words, more dark pool activity is generally associated with higher market quality.”²⁷

G. Trade-At Rule

SIFMA strongly opposes the adoption of a trade-at rule. A trade-at rule would prohibit any trading center from executing a trade at the NBBO unless the trading center was displaying that price at the time it received the incoming contra-side order. Under such a rule, even reserve orders on exchanges would be required to protect away quotes before receiving an execution. As discussed in more detail in our comment letter on the Concept Release,²⁸ a trade-at rule would have detrimental effects on the speed and cost of execution, the liquidity currently available in the market, and the ability of investors to control their trading interests. Indeed, a trade-at rule comes very close to a consolidated limit order book or “CLOB” – a concept that has been repeatedly rejected by the SEC and market participants for many years as a threat to competition and innovation in our markets.²⁹ Given the absence of compelling evidence that non-displaying trading venues are impairing public price discovery – indeed, as discussed above, recent research suggests that more dark pool activity is generally associated with higher market quality, SIFMA does not believe that such a significant change in market structure is warranted. Moreover, while proponents of this idea view it as a way to stimulate greater display of limit orders, it is not at all clear that trading interest that an investor or broker-dealer has deemed is best represented on a non-displayed basis will, in fact, be sent for display in a trade-at environment. We note that there are already incentives for displaying liquidity, such as rebates, trade-through protection and minimum price variations.

²⁶ For a more detailed discussion, see SIFMA Concept Release Letter at 11-12.

²⁷ Sabrina Buti, Barbara Rindi and Ingrid M. Werner, Diving into Dark Pools, Fisher College of Business Working Paper (available at http://fisher.osu.edu/faculty/werner/working_papers.htm).

²⁸ SIFMA Concept Release Letter at 12-14.

²⁹ See, e.g., Securities Exchange Act Rel. No. 51808 (June 9, 2005); 70 Fed. Reg. 37496 (June 29, 2005).

H. Access Fees and Sub-Penny Quoting

SIFMA continues to believe that quoting in sub-penny increments would not contribute to the maintenance of orderly markets. Sub-penny quoting would encourage market participants to “step ahead” of competing limit orders by submitting an order with an economically insignificant price enhancement to gain execution priority. Sub-penny quoting also poses both operational and technological challenges. Moreover, sub-penny quoting has implications in light of the existing “maker-taker” fee structures of various markets. For example, sub-penny quoting would be particularly problematic in the event market participants were to charge fees in excess of the spread for a stock. Thus, SIFMA believes that the SEC should study access fees and maker-taker rebate incentives and their potential effect on rebate arbitrage and execution quality.³⁰

I. Market Data

As we have discussed on numerous occasions, SIFMA believes that the lack of competition with respect to the availability of market data continues to be a pressing concern for retail and institutional investors. We urge the SEC to study ways in which the content of market data may be enhanced and be made available to all investors on fair and reasonable terms.³¹

J. Risk Management – Market Access

As SIFMA discussed in greater detail in its comment letter on proposed Rule 15c3-5,³² SIFMA, as a general matter, supports the use of pre- and post-trade controls on market access, and the general principle underlying the SEC’s proposed Rule 15c3-5 that such controls and procedures are appropriate in market access arrangements. If, however, proposed Rule 15c3-5 is to be effective, certain significant, complex issues regarding market access and related credit risk must be addressed before the SEC adopts a final rule. For example, proposed Rule 15c3-5 does not appropriately distinguish market access arrangements involving multiple broker-dealers, each of which undertakes a different role in a transaction. Similarly, because many broker-dealers rely on third-party risk management technology, the SEC should clarify that a third-party vendor may control the underlying software of such risk management technology, so long as the broker-dealer is able to control the software’s applied parameters and thresholds.

K. Regulatory Consistency

The current regulatory structure is beset by many conflicting or duplicative rules and regulations, regulatory initiatives and systems programming demands. This places unnecessary burdens on regulators and market participants alike, and poses significant risks to market efficiency and meaningful investor protection. As a result, we recommend that the SEC, SROs and other market participants undertake a comprehensive review of existing market structure and

³⁰ For a more detailed discussion, see SIFMA Concept Release Letter at 14-16.

³¹ For a more detailed discussion, see SIFMA Concept Release Letter at 22-23.

³² See SIFMA Market Access Letter. See also SIFMA Concept Release Letter at 10-11.

trading rules to identify conflicting or duplicative requirements that could be harmonized or eliminated. In addition, the regulators and firms must find ways to better coordinate and streamline system programming demands associated with regulatory changes. Moreover, in recognition of enhanced global connections of financial participants, SIFMA also believes that the SEC should pursue greater global regulatory coordination.³³

L. Consolidated Audit Trail and Large Trader Reporting

SIFMA believes that an efficient, harmonized and market-wide regulatory consolidated audit trail would be a significant step in improving oversight of the markets and, therefore, supports the concept of a consolidated audit trail proposal.³⁴ For similar reasons, SIFMA supports the concept of large trader reporting.³⁵ However, we believe that the SEC's large trader reporting proposal should be part of the process of creating a consolidated audit trail, rather than a distinct process, in order to ensure that any large trader reporting regime implemented before the consolidated audit trail would be folded into the consolidated audit trail, once it is operational.³⁶ SIFMA recently filed a comment letter on the large trader reporting proposal, and looks forward to commenting on the consolidated audit trail proposal later this summer.

M. Rules 605 and 606: Market Quality and Order Routing Data

As discussed more fully in our Concept Release comment letter, we believe that Rules 605 and 606 could be improved upon in light of market developments in favor of more informative tools. For example, we believe that there is value in disclosing broker-dealers' potential conflicts of interest regarding order routing, as required by Rule 606; however, such disclosures could be provided by means other than Rule 606 reports, such as through broker-dealer websites.³⁷

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³³ For greater detail on regulatory consistency issues, see SIFMA Concept Release Letter at 20-21.

³⁴ CAT Release.

³⁵ Large Trader Release.

³⁶ For a more detailed discussion of the consolidated audit trail and large trader reporting proposals, see SIFMA Large Trader Reporting Letter.

³⁷ For a more detailed discussion of Rules 605 and 606, see SIFMA Concept Release Letter at 16-18.

SIFMA appreciates the opportunity to comment on the issues raised at the Market Structure Roundtable. We look forward to further discussions about specific regulatory initiatives and equity market structure more generally with the Commission and its staff. If you have any comments or questions, please do not hesitate to contact me at 202-962-7300 or alvcek@sifma.org.

Sincerely,

Ann L. Vlcek
Managing Director and
Associated General Counsel
SIFMA

cc: Mary L. Schapiro, Chairman
Luis A. Aguilar, Commissioner
Kathleen L. Casey, Commissioner
Troy A. Paredes, Commissioner
Elisse B. Walter, Commissioner
Robert W. Cook, Director, Division of Trading and Markets
James Brigagliano, Deputy Director, Division of Trading and Markets
David Shillman, Associate Director, Division of Trading and Markets
Daniel Gray, Market Structure Counsel, Division of Trading and Markets



August 31, 2009

SIFMA Paper on Displayed and Non-Displayed Liquidity

I. INTRODUCTION

Concerns have been raised, particularly in the last several months, by regulators, members of Congress and the press regarding dark pools, flash quotes, and high frequency trading. It is clear from recent public commentary that these and related terms are often misunderstood, or used variably to cover a large variety of trading centers, trading interests, and trading mechanisms or strategies.

SIFMA¹ member firms, which serve both institutional and retail investors, believe that it is in their clients' and our markets' interests to study these trading concepts and to work with market participants, regulators and Congress to ensure that our markets remain fair, honest and efficient for all investors. To facilitate an informed review of the issues at hand, SIFMA prepared this paper to clarify the definition of many terms and reduce the confusion surrounding them.²

II. TERMS WITH NO CLEAR MEANING OR WITH MULTIPLE MEANINGS

As an initial matter, there are certain terms critical to the current debate that are not defined in the law and lack uniformity of meaning. They may, in fact, have very different meanings and purposes depending on the context in which they are used. SIFMA has identified several of those terms below.

- **DARK POOL, DARK LIQUIDITY OR DARK MARKET:** These terms have been used to refer to a wide variety of either trading centers or services offered by traditional, well-known trading centers, including *exchanges*,³ *ATSs* (alternative trading systems),⁴ *ECNs* (electronic

¹ The Securities Industry and Financial Markets Association brings together the shared interests of more than 600 securities firms, banks and asset managers. SIFMA's mission is to promote policies and practices that work to expand and perfect markets, foster the development of new products and services, and create efficiencies for member firms, while preserving and enhancing the public's trust and confidence in the markets and the industry. SIFMA works to represent its members' interests locally and globally. It has offices in New York, Washington D.C., and London and its associated firm, the Asia Securities Industry and Financial Markets Association, is based in Hong Kong. SIFMA's website is www.sifma.org.

² This paper focuses on these issues as they relate to the equity securities markets. It should not be used as legal guidance or viewed as a document conveying SIFMA member firms' consensus views (as is generally the case with SIFMA comment letters filed with securities regulators); instead, this paper is intended to convey the general understanding of these terms among SIFMA firms. For some readers, this paper may not be as comprehensive as they would wish while, for other readers, we recognize that it may be too "technical" in its use of industry terms and jargon. We note for these readers that each of the major markets provides on their website definitions of the order types used in their markets as well as of many other trading terms and strategies. Although we may use such terms and refer to such strategies in this document, we do not define many of them here for the sake of brevity.

³ The term "exchange" means any organization that brings together the orders for securities of multiple buyers and sellers and uses established, non-discretionary methods (whether by providing a trading facility or by setting rules) under which such orders interact with each other, and the buyers and sellers entering such orders agree to the terms of a trade. An organization that meets this definition can either register with the SEC as a national securities exchange or register as a broker-dealer and comply with Regulation ATS.

communications networks),⁵ and broker-dealers. Depending on the context, the terms “dark pool,” “dark liquidity,” and “dark market” have been used, for example, to refer to the following types of trading centers or services: (a) an ATS that does not display quotes publicly; (b) *internalization* practices of a broker-dealer (see below); (c) services at an exchange or ECN that allow for some or all of the quantity of an order to not be displayed publicly;⁶ and/or (d) a trading center whose reported volume is not separately identified when it is reported to the *Consolidated Tape (or Ticker)*.⁷

- **INTERNALIZATION:** This term is used to refer to a number of different trading practices, such as: (a) orders that are “preferenced” for execution at the trading center to which they were sent (including at an exchange); (b) market making firms that execute customer orders against their published quotes; (c) broker-dealers that seek to fill customer orders by crossing them against proprietary trading interest within the firm; (d) broker-dealers crossing incoming client orders against other existing client orders; or (e) broker-dealers engaging in riskless principal trades.
- **HIGH FREQUENCY TRADING:** There is no standard industry definition of the term “high frequency trading” (HFT); instead, there are several possible variations. HFT can refer to firms that generate multiple proprietary bids and offers and trade in a high-speed, automated manner, often taking advantage of short-term pricing inefficiencies while providing liquidity to the broader marketplace. In other cases, HFT is used more generally to describe any trading activity involving multiple, short duration (*i.e.*, millisecond), computer-driven orders that often use algorithms and low-latency market data. Overall, trading strategies and systems in today’s electronic marketplace have become increasingly automated and are functioning at much higher speeds for broker-dealers, institutions, and retail investors.

III. TERMS COMMONLY USED TO CLASSIFY LIQUIDITY

Given the current debate regarding “dark pools” and “flash quotes,” SIFMA believes that it would be helpful to describe the different types of liquidity available in U.S. markets today.

A. TYPES OF NON-DISPLAYED LIQUIDITY

Since the beginning of our securities markets, both investors and broker-dealers have chosen at times not to display the full extent of their trading interest for fear of moving the market in an adverse direction. Thus, market participants always have maintained pockets of non-displayed liquidity such as those discussed below.

⁴ The term “ATS” refers to a trading center that, while meeting the statutory definition of an “exchange,” is eligible to be regulated in accordance with the provisions of Regulation ATS. Many ATSs do not display quotes; instead, they match orders between their subscribers. ATSs are not new; indeed, they existed well before the adoption of Regulation ATS in 1998.

⁵ The term “ECN” refers to a subset of ATSs that widely disseminates quotations to third parties.

⁶ We note that exchange reserve (“iceberg”) orders are sometimes referred to as “dark,” but are really partially displayed orders. They are discussed further in a later section of this document.

⁷ Each exchange and FINRA, in its capacity as operator of the Alternative Display Facility (“ADF”), is required to provide transaction reports for completed transactions in its market within 90 seconds to a central consolidator known as the “Consolidated Tape.” Such transaction reports include the relevant stock symbol, size, and price of the transaction as well as the symbol identifying the market of execution. Each of the exchanges directly reports the volume of transactions executed on their respective markets to the Consolidated Tape. Non-exchange trading centers (*e.g.*, ATSs and broker-dealers) report their trades executed in the over-the-counter market to a FINRA Trade Reporting Facility (“TRF”). FINRA in turn reports the volume of such transactions to the Consolidated Tape, but the information does not identify the individual non-exchange trading center or distinguish between the ATS volume and other broker-dealer volume.

1. **WORKING ORDERS OF BUY SIDE/INSTITUTIONAL INVESTORS (E.G., MUTUAL FUNDS):** The greatest source of non-displayed liquidity resides at the investor level. Typically, investment managers have extensive trading interest residing in their order management systems that has not yet been sent to any trading center or broker-dealer. Buyside trading desks have tools that enable them to access such non-displayed liquidity in order to negotiate trades without committing trading interest to the marketplace.
2. **WORKING ORDERS AND CAPITAL COMMITMENT TRADES OF BROKER-DEALERS:** Broker-dealers often have not held orders⁸ from clients and/or their own internal trading interest that are not displayed at any venue. The extent of a broker-dealer's interest in a capital commitment trade is not displayed as it represents a bid or offer that could be made to a customer.
3. **EXCHANGE AND ECN ORDERS:** Exchanges and ECNs permit a trader to display all, some or none of the quantity of an order. While displayed and partially displayed orders of exchanges and ECNs will be discussed in the sections below, we note here at least certain types of partially displayed order types as well as non-displayed order types currently being used: hidden, reserve, discretionary and mid-point peg order types.
4. **ATS ORDERS:** Most ATSs accept orders that are visible only to their internal matching engines and are not part of the public quote stream. ATS structures and the functions an ATS performs vary considerably, and include: (a) single broker-dealer owned vs. consortium owned; (b) dissemination of indications of interest (IOIs) vs. no dissemination of IOIs (grey vs. dark); (c) routing capability vs. crossing only; (d) one single liquidity provider vs. multiple liquidity providers; (e) block crossing size restrictions vs. any size order; (f) dissemination of quotes vs. no dissemination of quotes; (g) center limited to certain market participants vs. one that is open; (h) derivatively priced vs. actively priced; (i) continuous trading vs. periodic crosses (point in time); and (j) automated matching vs. negotiated crossing.

B. TYPES OF TRADITIONAL DISPLAYED LIQUIDITY

The SEC's order display rule sets standards for the public display of quotes. A public quote includes the "side" (buy or sell), size (number of shares), stock symbol and price, and is shown to a public audience. Such a quote is therefore referred to as "fully displayed liquidity." Public quotes for bids or offers are collected by various trading centers, and then displayed to investors through a public data feed. A market center or market data vendor also may sell or otherwise provide more detailed information on the bids or offers it has received to market participants via direct data feeds. These direct data feeds, as described more fully below, often emphasize speed, content or both, and contain information that goes beyond the SEC's order display requirements.

1. **CONSOLIDATED QUOTES AND NBBO.** Under the national market system plans approved by the SEC, each national securities exchange, as well as each ECN and market maker, must supply to a central consolidator (*i.e.*, securities information processor, or "SIP") their best bid and offer (also known as their "top of book"). The best bid and best offer from all of the collected data is known as the National Best Bid or Offer ("NBBO"). This consolidated information is then made available to vendors, which disseminate the information to broker-dealers, investors and other persons for a fee.

⁸ For those who are not familiar with this term, we note that broker-dealers have discretion with not held orders but no discretion with held orders, which are usually retail orders.

2. **ADF QUOTES:** The Alternative Display Facility, commonly known as the ADF, provides market participants (*e.g.*, ADF-registered market makers or ECNs) an alternative mechanism for posting quotes other than on an exchange.
3. **DEPTH OF BOOK:** “Depth of book” data, available from certain market data vendors or directly from exchanges and ECNs, shows all of a market center’s bids and offers, including top of book and any bids or offers at prices away from the top of book. This information provides market participants with a more in-depth view of the available liquidity in a particular stock. Some trading centers offer depth of book data for a fee, while others freely disseminate it.

C. TYPES OF PARTIALLY DISPLAYED LIQUIDITY

Certain types of liquidity do not fit neatly within the definition of a public quote and are often referred to as “partially displayed liquidity.” They often may be missing one of the basic quote elements, may be part of an order that is related to a public quote, or may be directed to a limited audience of investors (or a combination of these).

1. **INDICATIONS OF INTEREST AND ACTIONABLE IOIS:** IOIs are generally expressions of trading interest in a security where the price, side, or number of shares is not always specified by the sending party. An IOI is not considered a firm quote and cannot be executed without further interaction with the IOI’s sender.⁹ If the trading interest always or nearly always results in an execution without further interaction with the IOI’s sender, then the IOI may be characterized as a quote. IOIs can be communicated verbally or electronically disseminated through a direct data feed.¹⁰ In essence, IOIs can be viewed as an automated means of seeking contra-side trading interest from one or more trading partners, a practice formerly done through a manual or verbal process. Sometimes, the term “actionable IOI” is used to describe, among other things, any IOI or quote message sent to a designated private network of market participants that are alerted to a trading opportunity that exists if responded to in a timely manner.¹¹
2. **EXCHANGE FLOOR TRADERS:** Exchange floor traders maintain a pool of non-displayed liquidity that may be accessed manually or electronically by sending an order to the exchange, either to the broker directly or to the exchange book. Such “working orders” are shared with other floor brokers through verbal negotiation and/or the posting of a bid or an offer. This source of non-displayed liquidity deriving from exchange trading floors has long been a characteristic of the auction system.
3. **FLASH QUOTES:** The term “flash quote” refers to immediately executable quotes that exchanges disseminate (*i.e.*, “flash”) for a very short period of time (*e.g.*, less than 1/2 second) to their direct data feed subscribers.¹² Flash quotes have an extremely short duration and are not included in the public consolidated quotation data.
4. **DIRECT DATA FEEDS:** Typically, flash quotes, IOIs, and depth of book data are disseminated via direct data feeds to interested market participants. The information is

⁹ <http://www.sec.gov/rules/final/34-40760.txt>

¹⁰ Exchanges also may disseminate in a direct data feed imbalance information for open/close aggregated orders.

¹¹ There is also an “SOI,” or “Solicitation of Interest,” which is similar to an IOI and has been approved by the SEC for the International Securities Exchange.

¹² Flash quotes are, or have been, offered by several market centers. These market centers view (or viewed) flash quotes as a means for seeking additional liquidity for the execution of an order within their trading center before the unexecuted portion of the order is routed away or cancelled.

offered either for a fee or through some kind of mutual arrangement. Such direct data feeds usually emphasize speed or targeted content, or both.

- a. **Faster Speed:** Some direct data feeds enable recipients to receive information faster than the public SIP feed (reduced latency), sometimes even up to a full second faster. Exchanges and ECNs, for example, will usually disseminate their detailed quote information to whichever market participants can afford to build the infrastructure and pay for the high speed feed.
 - b. **Content:** Some direct data feeds may include more detailed content, such as depth of book or partially displayed information (*i.e.*, IOIs, negotiation messages, and certain flash quotes).
5. **RESERVE/ICEBERG ORDERS:** Most exchanges and ECNs offer order types that allow market participants to indicate that a portion of their order should be continually displayed in the public quote stream with a residual portion of their order left in reserve and kept from the public quote stream. These “reserve” orders are known as “icebergs” in Europe because the displayed component is usually only the tip of the iceberg, with the bulk of the order hidden (underwater).

IV. RECENTLY RAISED QUESTIONS

A. PRICE DISCOVERY AND NON-DISPLAYED LIQUIDITY

Issue: Whether the use of dark pools impairs price discovery and provides disincentives to publicly display quotations.¹³

Response: The concerns about price discovery appear to be based on the assumption that the use of non-displayed liquidity diverts order flow away from the public quoting markets, thereby adversely affecting the execution quality for those market participants that display their orders in the public markets. SIFMA believes these fears are unfounded, based on history and practice. First of all, there is no economic incentive for all (or most) liquidity to go dark. Trading professionals, particularly those with large orders that are likely to have a significant impact on the market (*e.g.*, orders for money managers that oversee collective pools of assets contributed by individuals), always have a dual focus when seeking best execution of their orders: displaying a quote to achieve a more certain execution (with the risk of moving the market adversely) versus not displaying a quote in an attempt to reduce market impact and potentially obtain price and/or size improvement. This natural “give and take” between certainty of execution (and eliminating “opportunity cost risk”) and managing market impact (with attempted price/size improvement) works to maintain equilibrium between non-displayed and displayed liquidity.

Indeed, such equilibrium generally has been maintained over the years, even as non-displayed liquidity has evolved from a manual process to more automated solutions. For example, since the early years of the NYSE, there have been floor brokers who worked large orders discreetly in

¹³ For some of the issues discussed in this section, we note certain instances in footnotes where these issues were raised recently. For this issue, *see* Chairman Mary L. Schapiro, SEC, Testimony Concerning SEC Oversight: Current State and Agenda, Before the United States House of Representatives Committee on Financial Services, Subcommittee on Capital Markets, Insurance and Government-Sponsored Enterprises (July 14, 2009) (“Schapiro July 14 Testimony”); Speech by Chairman Mary L. Schapiro, SEC, New York Financial Writers’ Association Annual Awards Dinner, New York, NY (June 18, 2009) (“Schapiro June 18 Speech”); Speech by James A. Brigagliano, Co-Acting Director, Division of Trading and Markets, SEC, 2009 SIFMA Market Structure Conference, New York, NY (May 20, 2009) (“Brigagliano May 20 Speech”).

order to obtain the best possible price for investors. In the over-the-counter markets, traders held their trading interest on their desks and used the telephone to call trusted partners to inquire about possible matches. As markets have evolved, new ways of managing this trading process and the risks associated with displaying large trading interest have developed. The growth in the number of ATSs, for example, can be viewed as a necessary electronic manifestation of an age-old process, rather than a new trading concept.

In addition, we note that non-displayed orders and related trading activity are part of the price discovery process. Market participants that use non-displayed orders constantly monitor and respond to displayed bids and offers as well as to last sale and volume traded information (which originates from both displayed and undisplayed order types and markets). Market participants using non-displayed order types display orders when market conditions compel them to shift from passive to more aggressive interaction with the marketplace. For example, when the market price of a security changes or a certain amount of volume is reported to the tape (again, whether executed at a displayed market or dark pool), such activity can cause trading behavior to change from passive (*i.e.*, use of undisplayed or partially displayed orders) to active, where a trader will “take” or display liquidity.

Our markets and trading technologies have evolved considerably over time. While the process has become more sophisticated and complex, most of the basic principles remain unchanged. Dark pools and undisplayed orders (like the trading interest in a floor broker’s book) play an important role in the investment trading process, in ensuring market efficiency, and in price formation.¹⁴ As such, the use of non-displayed orders, when properly regulated, will continue to be beneficial to investors of all types. SIFMA supports periodic reviews of new trading developments to ascertain their effect on market efficiency and the price discovery function and to determine whether new or different regulation is needed.

B. POST TRADE TRANSPARENCY

Issue: Whether the use of dark pools undermines the quality and quantity of publicly disseminated trade information.¹⁵

Response: “Post-trade transparency” (reporting to the Consolidated Tape) differs from “pre-trade transparency” (price discovery). Non-displayed orders, which have no pre-trade transparency, do have post-trade transparency in that transactions resulting from non-displayed trading interest are publicly reported to the Consolidated Tape. The current transaction reporting rules, however, do not call for identification of the individual non-exchange trading center or distinguish between the ATS volume and other broker-dealer volume. SIFMA believes that a review should be undertaken to determine whether and how to enhance post-trade reporting transparency. For example, one recommendation may be that all ATSs should follow uniform reporting practices in order to provide reliable public information on their trading activity. SIFMA looks forward to any such review of the type and timing of post-trade transparency with market participants.

¹⁴ As the former Director of the SEC’s Division of Trading and Markets, Erik Sirri, said, “... dark pools of liquidity have been around for a long, long time. The single largest dark pool in the world for many decades could be found on the trading floor of the New York Stock Exchange. The floor traders there manually represented a pool of undisplayed liquidity that could be accessed only by sending an order to the floor to probe buying and selling interest. ... Dark pools are solutions to a perennial trading dilemma for anyone that needs to trade in substantial size, particularly institutional investors. They provide a mechanism for such transactions to interact without displaying the full scale of their trading interest. Today, nearly every equity trading venue in the U.S. offers some sort of dark liquidity.” Speech by Erik Sirri at SIFMA 2008 Dark Pools Symposium, February 1, 2008 (“Sirri February 1 Speech”).

¹⁵ Schapiro July 14 Testimony; Brigagliano May 20 Speech.

C. INDICATIONS OF INTEREST VS. ORDERS/QUOTES

Issue: How IOIs as opposed to orders/quotes should be treated from a regulatory perspective to avoid undermining the fundamental goals of the national market system.¹⁶

Response: The SEC has previously differentiated IOIs and orders by describing IOIs as interest to buy or sell a security where the price, side or number of shares is not always specified, unless the price or size is implied. In other words and as previously mentioned, an IOI is trading interest that cannot be executed without further interaction between the market participants. SIFMA supports the SEC's continued reliance upon this previously articulated definition of an IOI. SIFMA, though, urges the SEC to clarify and then appropriately enforce the application of this definition to new types of trading interests as they appear.

D. INFORMATION ACCESS

Issue: Whether high speed data feeds, IOIs, etc. lead to the development of significant private markets to which public investors have no access.

Response: As discussed earlier, there are many types of market data feeds today that offer various levels of information to market participants and at different speeds. Institutional and retail investors, as well as trading professionals, often value and therefore seek unique levels of information that are important to them, and at the speed they want. SIFMA believes it would be a step backwards in market structure evolution if we forced all data recipients to receive market data at the same speed, as this could reduce the market to the lowest common denominator and will inhibit innovation in new technologies and processes. The different levels of speed and information are available to all investors and market professionals if they believe it necessary and assuming it can be obtained at reasonable cost. The option to access different levels of information and speed does not raise fairness concerns as long as this option is available to all market participants and investors and at reasonable cost.

E. TRADING ACCESS

Issue: Whether Regulation ATS's fair access rule sufficiently protects investors.¹⁷

Response: The SEC adopted the fair access rules under Regulation ATS to ensure that market participants have adequate access to the many advantageous services provided by significant ATSs, including any non-displayed liquidity, which may not otherwise be available. The fair access rules of Regulation ATS require ATSs with at least 5% of the trading volume in a security to establish objective, fair standards for access to its system (*e.g.*, a standard based on credit requirements or disciplinary history). The SEC set the threshold at 5% in order to balance the competing interests of (i) ensuring appropriate access to those ATSs with a significant percentage of trading volume with (ii) allowing start-up and other small ATSs to enter the business and offer competition without incurring undue costs associated with the fair access requirements. SIFMA believes that this threshold to date has appropriately balanced the competing interests, while ensuring adequate access to significant sources of liquidity.

It also is worth noting that many exchanges and broker-dealers have established execution relationships with dark pools, and that many markets have order types to facilitate accessing dark liquidity if their investors so desire. Sophisticated technology and linkages therefore enable investors to access dark liquidity if they wish. However, in light of the continuing changes in our

¹⁶ Schapiro June 18 Speech; Brigagliano May 20 Speech.

¹⁷ Schapiro July 14 Testimony; Schapiro June 18 Speech; Sirri February 1 Speech.

markets, SIFMA supports reviewing Regulation ATS to determine whether its fair access provisions and, in particular, any exceptions to them remain appropriate for today's markets.

F. FRAGMENTATION

Issue: Whether ATSs should be linked somehow to avoid an overly fragmented market.¹⁸

Response: The existing national market system, which provides for inter-market linkages and public display of consolidated quotation and last sale information, and the adoption of the Order Protection Rule under Regulation NMS ensure that market participants are able to obtain access to market information as well as maintain the practical ability to access the displayed and non-displayed markets. Because many market centers have trading relationships with dark pools, retail investors therefore have an opportunity to interact with the liquidity in dark pools by sending orders to broker-dealers and exchanges to utilize their services. Fragmentation, and the competition that it encouraged, has thereby benefitted our markets and investors and should continue to do so, as long as the appropriate parameters for access to market information (such as reasonable cost) and to dark pools (such as standard access requirements) are in place.

It is important to note that the industry went through the same analysis regarding fragmentation and price discovery issues, including concerns with ATSs possibly siphoning liquidity, in 1999-2000.¹⁹ At that time, the concept of consolidating liquidity in a centralized limit order book, or CLOB, was thoroughly debated and rightfully discarded. SIFMA believes that, with the combination of private linkages and the Regulation NMS trade-through protection, having multiple markets (*i.e.*, fragmentation) is less of a market structure or best execution concern. Accordingly, SIFMA believes that there is no need to mandate any additional linkages at this time.

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SIFMA and its member firms stand ready to assist further in ensuring that the market structure issues and trading concepts and terms in this paper are fully understood, and that revisions to existing regulations or new regulations are instituted where necessary to ensure that the U.S. markets remain vibrant and efficient and that investors' interests remain protected.

In this regard, please contact the following SIFMA staff members if further information or assistance from SIFMA or its member firms would be helpful:

- For press inquiries, please contact Andrew DeSouza (adesouza@sifma.org) or Travis Larson (tlarson@sifma.org).
- For Congressional inquiries, please contact Scott DeFife (sdefife@sifma.org) or Margaret Simmons (msimmons@sifma.org).
- For inquiries from securities regulators, please contact Ann Vlcek (avlcek@sifma.org).

¹⁸ Brigagliano May 20 Speech.
¹⁹ <http://www.sec.gov/rules/sro/ny9948n.htm>