THE BROOKINGS INSTITUTION

TRADING STOCKS IN AMERICA: KEY POLICY ISSUES

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P R O C E E D I N G S

MR. ELLIOTT: Good morning. I'm Doug Elliott from the Economic Studies Program here at Brookings, and thank you again. This morning our panelists were examine the structure of the market for equity trading here in the U.S., and discuss ways to improve it.

This may seem a bit of an arcane subject, but one can see its importance by considering that the market capitalization of listed U.S. stocks is in the neighborhood of 20 trillion dollars. So we believe that the technical nature of the policy issues has resulted in too little focus on how to optimize the performance of these important markets, and that led us to design today's event.

We'll hear from two panels. The first will provide analytical background on the equity markets, and will highlight views from the regulatory and academic spheres.

The panel will be moderated by my colleague Martin Baily, who you'll see in a moment, he's the Director of the Imitative on Business and Public Policy here at Brookings. He was formerly the Chair of the President's Council of Economic Advisors.

The second panel brings representatives from different parts of the industry to discuss their views on the structure of the equity trading markets, and what ought to be done going forward. I will be moderating that panel.

So without further ado let me turn the mic over to Martin Baily to introduce the first panel. Thank you.

MR. BAILY: Thank you. It's a pleasure to be here and we thank everyone who's braved the 10 degree temperatures, and the delays on the red line to make it here. I think we're hopefully going to have something that's worth everyone's while.

Following the financial crisis the emphasis was largely on what went wrong, and who was responsible, and how could the regulation be changed to make the

system safer. I think that was an understandable focus. But fortunately now, I think we see more research and more interest looking at what it is that the financial sector does, what roles does it play, and more importantly, how do market structure and regulation either facilitate or potentially impede that process.

We are fortunate today to have a distinguished panel of people or two panels who've been answering those questions all along, even before the crisis. In particular, looking at the market trading side of this.

Our first speaking will be Doug Elliot who you've already seen. Doug had a lot of experience as a practitioner in financial markets, primarily at J.P. Morgan. He's now a very prolific and distinguished author here at Brookings, and researcher looking at financial regulation and at the financial system.

He's also done a lot of work with the folks in Europe understanding their approach to regulation, and some of the agreements and disagreements between us and Europe. He's going to set the scene for our discussion today.

Following Doug, Gregg Berman, who is the Associate Director of the Office of Analytics and Research in the Division of Trading and Markets at the SEC. He covers equity market structure, clearing house risk, derivatives transparency, broker dealer capital, and other things that his has on his resume.

Prior to the SEC he headed the risk business of Risk Metrics Group, and prior to that he co-managed some hedge funds. He has a PhD in physics from Princeton.

He'll be followed by Daniel Weaver, who has a PhD in finance from Rutgers, where he is also a Professor of Finance and Associate Director of the Whitcomb Center for Research on Financial Services.

His teaching and research focus on security design and security market structure. Recent papers include an examination of the value of liquidity providers. Dan is widely quoted in the media, and has testified to the SEC and to Congress.

He will be followed by Chester Spatt, who received his PhD from the University of Pennsylvania and is Professor of Finance at the Tepper School at Carnegie Melon. He was previously Chief Economists of the SEC, and Director of its Office of Economic Analysis.

His research has focused on market structure, trading pricing and valuation. He's a member of so many things I can't list them all, but of the Model Validation Council of the Fed, and of the Systemic Risk Council.

I'm going to step down and not bounce back up and down. So let's start with Doug, and then each person will go in turn. Thank you.

MR. ELLIOTT: Hello, again. I thought I would just take a few minutes to, as Martin said, give a little background here. One of the things I think you're going to find, for those of you who are non-specialists, and I'd include myself in that, because I cover financial regulation very broadly but not this area so particularly, is these discussions can get very technical very fast.

But what I think we need to keep in mind is what are the central objectives that the various parties have, and that we think should be the objectives of public policy, and what are the trade-offs between these.

Trade-offs are particularly important partly because the system seems to actually work quite well. So we're not talking about a broken equity trading system where we might be looking at radical reforms. We're talking much more about how to take a basically well-functioning system and work out the things that are problems and find ways to improve. That tends to push towards solutions where there are trade-offs, and we just have to decide what's most important.

If we go way back, I do think it's useful to briefly think about why we even have equity and why we have markets in equity. In primitive forms of capitalism it was difficult to get the money together and allocate it particularly for large projects. So we

ended up having the advent of managerial capitalism where we had professional management out of joint stock companies that could bring in money from more than just a family or a clan.

By doing those things we have better management standards, larger, more far flung enterprises, much better opportunities for investors. It's not just who you happen to know in your family that might be able to do something with the money. Therefore, improved allocation of capital in the whole economy.

Once stock ownerships becomes important than it also becomes important to find ways to trade the stock because investors value liquidity very highly. They want readily saleable instruments. When you create exchanged you create access to capital at much cheaper prices. It also allows investors to diversify.

As a byproduct of all this, trading of stocks allows important market signals to show us whether companies are doing smart things with the money or not so smart things, and therefore push managements in the right direction. So it's good to have this working well.

Now, different key groups here have somewhat different but overlapping objectives. I mean, everybody wants the system to essentially work, but they have different priorities here. So you need to think about investors, the businesses that issues stock, and therefore raise money through this, the larger public, and then, of course, there are the operators of the trading venues and related services.

So going through them one by one. With investors I think it's easy enough to imagine what their objectives are. They want to be able to execute at very low cost. They want to do it quickly. They want to do it with certainty. They want fair access to the market so there's not somebody else getting a better deal, and therefore pulling down their relative return. They want transparency about what everybody else has done or is willing to do, like with bid offers.

At the same time, especially if they're a large investor, they don't want everyone else to have that same transparency about them, at least while they're in the midst of executing a large trade that can take some time. Then you've got specialized investors such as arbitragers that may have specific objectives that I'll leave aside.

Businesses mostly just want efficient, effective trading mechanisms so that investors are willing to buy shares without tacking on a big premium of some kind. Therefore, the businesses can raise money at reasonable prices.

They also want deep markets, so if they want to sell additional shares they can do that relatively easily without moving the price too much. And, of course, they want a minimization of any kind of technical problem that might cause big stock price movements for purely technical reasons.

The public, of course, wants the investors to be happy, and wants the businesses to be happy because what we most want is for this to be an effective way for businesses to raise money and for investors to deploy capital.

But we also as a society have additional things we care about. We have fairness standards. For instance, there actually is some argument that insider trading makes for a more efficient market by getting information subtly out there, but we don't think that's a fair way to run markets. There are other points where we feel regardless of market efficiency we simply don't want to do things in a way that seems unfair.

Further, of course, while none of the individual actors care very much themselves, as a society we want stock prices to reflect fairly the long-term prospects of the companies. So we don't want technical factors from how the markets work to get in the way of that transmission of information.

Then, of course, there are the service providers, and you'll hear from a number of them today on the second panel so I won't go into great length. A simple point is this is a big enough market. There are a fair number of people who make good money

by helping make these markets work.

You have the stock exchanges, you have the operators of dark pools and other trading venues that aren't stock exchanges. You have liquidity providers of various kinds, information providers, and I'm sure I've missed some categories here.

While all of these are important to the functioning of the markets, and they all share an interest in the markets fundamentally working, but they also have contrary interests in many cases as to how the pot of profits from all this gets divided up.

So my final slide is just to say there are many trade-offs that you're going to have to consider as you hear the first panel and the second panel. Some of these involve transparency versus confidentiality, such as when a large investor wants to do a trade that will take time, is it more important for us as the public to have the information about their initial trades out there or is it more important to give them some time to execute so that it's possible to have large investors.

Similarly, we want free competition among trading venues because competition tends to result in better outcomes. But this can also create systemic complexity by having so many different parties doing things different ways.

Another thing is trade-offs between methods that ensure that people get the best price versus methods that assure very, very fast execution. And then fairness can play against many of these other objectives.

So let me leave it at that, and I'll turn it over to the people who are actually more expert in this area. Thank you.

MR. BERMAN: Thank you. I'm very pleased to be here today and be able to talk about some of the subtleties, as well as some of the bigger picture aspects of market structure. We didn't have a prep call or rehearse anything, but a lot of my comments I think are going to echo very much what Doug had said.

So I'd like to take the theme a little further in certain direction. So I have

a hypothesis. The first portion of the hypothesis you just heard, but I'd like to reemphasize that because it is a hypothesis that actually might be in the minority right now.

The markets are not broken. In spite of what you read everywhere, in spite of what many market participants say, and in spite of what many jurisdictions and other regulators might say about the equity markets, they're not broken. I'm convinced of that for two reasons.

One is, I have a very good sense of what broken is and what broken is not. Three weeks ago Stephen Hough, international pianist, did a great concerto at Kennedy Center. Some of you might have caught that. My wife and I got dress up, put my suit on, went to the garage, went to the Volkswagen, turned the key, nothing happened. It didn't ding. It didn't do anything. It just sat there staring at me, and I kept turning the key and nothing happened. Do you know why the car didn't start? It was broken. That's what broken means.

On any typical day there are somewhere in the order of 5 to 6 billion shares that are traded. If we be conservative and say the average trade size is 200 shares, which it's not, it's actually lower that, but it's easy to do the math that way, it's about 30 million trades. Thirty million trades conducted on a given day from 10s of 1000s of individual asset managers representing 10s and 10s of 1000s of funds. Hundreds of thousands of retail investors and all the liquidity providers.

On any given day you might get a note from a marketplace that says, we are breaking the following nine trades that occurred in the following six seconds because of a problem. Very, very few industries have that low of a level of failure. But when you do have a very low level of failure those failures make the headlines all the time.

So I think I have a good sense, and you do too of probably what it really means to be broken and the equity markets do not fit the criteria of what's broken. So

that's my first part of the hypothesis.

The second part is that there is something that's broken. There's something I think that's very broken and in need of repair, the debate on market structure is very broken. I think the way that we talk about market structure, I think the rhetoric that's in the industry right now needs to be fixed. So while I think it's easy to show the first, why do I say such a statement like that?

Well, if you look at where the debate on market structure's taken us over the past year or so there seems to be focuses in a very myopic portion of the market, and people tend to be using evidence that may not actually be good evidence of certain practices by ignoring some of the facts. That's a very abstract thing to say, so let me put some concreteness around that.

Last week there was an article -- it may be the beginning of this week, I think in the Wall Street Journal which yet again echoed that the problem with the market is it's too complex. Now that's a fair comment. One should explore complexity and see whether or not complexity actually is causing any material issues or any significant issues.

So there's nothing wrong with making that statement, but you do need to then line that up with some of the facts and see what the issues are. So what's the number one thing that people pin on complexity of the markets?

The number one thing that people talk about, and this has been going on for two years now, is complexity of the markets is the cause of all the failures in the market disruptions that we have. They're the cause of the mini flash crashes. They're the cause of the problems with NASDAQ on their Facebook IPO. They're the problems with Night. They were the problems with then the CBOE goes out. All of those are caused by the complexity of the market.

That's easy to say, but I think we really should test that and see if that's

true. When you look at what actually happened in any of those instances, it does not at all seem like complexity is the culprit. It seems like the issues are much -- in certain senses a little bit more difficult.

They are problems with core technologies. When it comes to a lot of the little blips that we see that people say are market breakdowns. Those are caused primarily by people who say I thought I was going to buy 800 shares. I'm sorry I put in 85,000 shares and the stock only trades 8,000 shares a day. My fault. I guess I'll have to eat that and that's it.

That doesn't seem to have anything to do with the fact that we have diverse or fragmented market depending on how you look at it. It has to do with people who are just not doing basic fundamental checks and balances of the training. So that continues to be out there in ether. That complexity has created those issues. That really doesn't seem to hold true.

The other aspect that we hear a lot about is that because of the fragmented nature of liquidity and the markets themselves, this has led to a lot of the complexity of high frequency trading, of the speed of the markets, of the rapid cancels that happen in the orders that are placed, etcetera.

Again, a good hypothesis. So one can test that. One can say, is modern market making through high frequency trading and speed, is that a result of complexity? Is that a result of fragmented markets? Is it a result of things like the maker-taker model?

Fortunately there is another market out there. There's another market there that doesn't have any of those characteristics. It's even larger in certain respects than the equity market. It's called the futures market.

What we found in the study of the Flash Crash, and what the CFTC found in subsequent papers is that high frequency trading can dominate the E-mini market, which is an equity index, just as much as it can dominate and influence the

market in equities.

So if that's the case that there's lots of high frequency traders in the futures market, well, that's one market. In fact, it's completely vertical. Clearing, trading, all happens in one shot. Where's the fragmentation?

So there must be something more to the debate about market structure than just the nature of fragmented markets and the nature of complexity. Because it does not lead us to the right conclusions.

So in just the few minutes I have left give you some thoughts on what I think those things are that would better help the debate on market structure.

I think there are three ingredients of market structure, only one of which is currently being really debated and in either.

There is a very significant focus, it has been for quite a number of years on the concept of orders and cancels. How fast the orders are going in. How fast the orders and cancels. There's legislation around the world about slowing down the market because they have labeled the market as being speeded up by the fact that there's orders and cancels. Lots of questions about algorithmic trading.

Unfortunately for the debate, what's missing from that are two other aspects of the market. The first is those who past orders are not the only ones who use computers. They're not the only ones that use algorithms, and they're not the only ones who have a vested interest in how those orders get placed.

The entire buy side, whether it be retail investors through their broker dealers, large assets managers who are running money for institutions, or large asset managers who are managing a 401k. They all use execution algos. They all are trying to facilitate the exact same thing, but on the opposite side. They take liquidity instead of provide liquidity, but the dynamics are still there.

In a paper that we just published in October we were able to show that

the characteristics of off exchange trading looked exactly the same as the characteristics of on exchange trading. So it seems like the use of algos to facilitate buying and selling stocks by buy side institutions is the same as whether or not they're doing on exchange or off exchange.

So if you only look at those who provide liquidity without looking at all the systems and the methodologies that take liquidity, you're really only looking at half the equation.

And the third and final point I'll make is the last of the missing ingredients that people very rarely talk about is not just the marketplaces, and not just the participants, but what about the things that we actually trade? What's their influence on the market structure itself?

So we started with a world where we primarily had equities trading, and now on any given exchange we have a wide array of products: exchange traded funds, exchanged traded notes, other types of exchange traded projects. You can trade commodities, fixed income, emerging market debt. All through intraday trading on an equity exchange.

There are huge implications for that. That drives a lot of the market structure that's out there. I think a lot of the work that we've done at the SEC in publishing data on that materially shows how this different order and trade cancellation reissuance for exchange traded products than there are for equities.

That doesn't say anything negative, or it's not meant to say anything negative about the products themselves or about how buy side institutions use algos. My big point is that in order to really understand how the markets work, if you don't look at the interaction between the buy side and the sell side institutions, and you don't look at the interaction between the products that are being put on the markets, and how people trade them then we're only looking at a very, very small part of the market.

At the SEC, myself and my colleagues are trying to inform this debate. Many of you may be familiar with the new website that we put out. We tried to put data out there that directly shows how some of these interaction happen. We'll be doing that throughout the upcoming years.

We've gotten a lot of good feedback on that so far, and look forward to continuing in providing that information as we try to tilt the debate more towards something that can be actionable as opposed to something that uses some of the bigger words of complexity, and other types of abstract concepts. Thank you.

MR. WEAVER: You know, I'm reminded of a comment that you made earlier about the transparency people wanting to know what's going on in the markets. For many years I've had discussions with traders and they all tell me, I want to see everything that's going on. I want to see everybody's order. And I used to tell them, okay, well, that's fine. If you get to see their order they get to see yours. Oh, no. I don't want to show them mine, but I want to see theirs. I heard this so much. It was so antithesis to logic. I finally got up here in Washington, a regional STA meeting and said, look, you have to admit, you all want to go to the nudist colony fully clothed. And you could see all the light bulbs going off in the audience. Oh yeah, now I get it, now I get it.

Now, I agree the markets aren't broken, but perhaps they might need a little tune-up. As they always do from time to time. So I'm going to talk about that today.

I thought I would start by talking about where we came from. How we got to where we are. A lot of people aren't aware of that. They start off with today, and they don't understand the history of where we came from. In the good old days we had manual trading. Orders were delivered by phone and quotes were conditional. That meant that published quotes were not expected to be valid at all. We also had very wide spreads induced by 1/8 ticks that carry over from the 1700s.

The crash of 1987 and what happened after it brought about a significant

change in the markets in my view. NASDAQ repurposes a small order execution system so that for the first time NASDAQ bids and offers could be lifted from the system. It was the first wide usage of automated execution.

Related to that, Harvey Houtkin, the fifth Jersey boy, learned how to use the system to his own benefit, and to the demise of some market markers by hitting stale quotes. He was the first SOES bandit. He was actually the forbearer of today's high frequency traders. So they trace their roots back to the late 1980s.

NASDAQ, at the time, viewed itself as a pure dealer market. Public limiters were ignored, Manning 1 and Manning 2 is proof of that. The BBO was defined as only NASDAQ dealer quotes. The only electronic communication network out there was Incident. And almost all order flow was subject to referencing agreements between brokers and dealers. Either a cash payment for flow or in kind soft dollar payments.

The New York Stock Exchange liquidity had inertia. Regional stock exchanges and dealers paid for order flow, but they weren't able to syphon much off. Orders went to where the liquidity was. But these payments they were making were substantial.

They were substantial for two reasons. Number one, the minimum spreads that market makers and specialists needed to stay in business were much smaller than the spreads that were induced by have a discreet pricing grid due to large ticks. And also, if you could partition your order flow into orders that were small and in retail orders, which were uninformed, then you could avoid the adverse selection component of spread, and you would end up with an even smaller needed spread compared to other people who did not partition their order flow.

In 1996 we had the order handling rules, another big step forward. Limit orders were now able to directly compete with dealer quotes. This led to the creation of a large number of alternative trading systems. They featured automatic execution. They

charged traders to access quotes, a tinker model. They didn't pay rebates at the time. They didn't have to.

NASDAQ dealers did everything they did to discourage public limit orders, and because of that when they were able to compete with dealer quotes the public sent their limit orders to these ATSs to compete with NASDAQ dealers, not to the NASDAQ dealers themselves. That was the beginning of all of these maker-taker models.

Larger tick size, as I said earlier, led to spreads being wider than they should have been. This lead to excess profits which could be used to pay for order flow. Critics felt, including a number of people in Congress, that payment for order flow led brokers to route orders to venues that paid them the most.

So what we did is we reduced tick sizes from 1/8 to 1/16 and then a penny. The tick sizes reduced payment for order flow, but it did not eliminate it. Why? Because people could still reduce their needed spread even further by limited the orders they paid for to small retail orders, these uninformed orders.

Today the ATSs have adopted a maker-taker model. They started just a taker model, and then to compete with the exchanges and try to steal order flow away from the exchanges they established legitimacy by having all limit orders from NASDAQ. They then focused on NYSE listings, and they were able to adopt a maker-taker model to take a lot of order flow away from the New York Stock Exchange and the other exchanges, and the exchanges to compete went ahead and adopted their own maker-taker models.

In addition, brokers have learned how to earn the spread rather than routing orders. They either internalize where they earn the entire spread themselves, but that gives them risk of price movements in that inventory. They can eliminate that risk, and they've done this quite well by establishing the dark pools and charging people with

the right to be able to internalize effectively the orders by interacting with the orders on these dark pools.

Does it matter? Yes. Betalial, Corbett, and Jennings have a recent paper that shows that brokers tend to route orders to the venue that pays them the most, gives them the biggest rebate, and they find that they results in lower market quality in that, their definition of lower market quality orders to go there to these high rebate venues tend to stay there longer. So if you're missing the market then you're experiencing a reduction in market quality. I have a paper on internalization that shows that higher internalization rates lead to wider spreads.

What could help? Trade out rule. The Toronto Stock Exchange adopted a trade out rule -- similar to a trade out rule, and what happened is they experienced a significant reduction in spreads following that.

Now, critics say that it's not necessary, the spreads are lower than they've ever been. But the correct metric is not to say, spreads are lower than they've ever been. The correct metric is how low could they be. Could they be even lower? And I think they could be.

Also critics say we should allow venues to compete for order flow. I hear this all the time from my colleagues. We should allow venues to compete for order flow. The problem is they're not competing for natural buyers and sellers' order flow. They are competing for your brokers' order flow. Those rebates don't necessarily flow back to the individual investors.

Imagine if you hired someone to choose the correct cell phone company for you. We don't want that. We want to choose it ourselves. But we allow this kind of intermediated model in securities markets.

I want to touch on another area that has come under recent scrutiny. We've had a dearth of IPOS, especially small IPOSs in the United States in recent years.

People have tried to come up with a way to correct this.

One proposal has been to adopt wider ticks for IPOs. The idea being that wider ticks will attract more liquidity. Why? Well, we know that wider ticks leads to higher payment for order flow. In this case, higher rebates. Higher rebates will encourage people to submit limit orders. That will in turn, turn around and give you more liquidity.

However, wider tick sizes lead to wider spreads. Wider spreads are directly related to the cost of capital. Wider spreads will lead to a higher cost of capital for these small startup forms which will limit their ability to expand.

Another issue which hasn't been addressed is that trading of IPOs these days is very fragmented, and that hasn't been addressed as perhaps a cause we have in lower number of IPOs. I have a paper looking at consolidated versus fragmented IPOs, and we conclude that consolidated IPOs have consolidated information, as a result they have much lower underpricing.

Now, when we look at it from the company's perspective, they leave less money on the table. So that's another issue that may be a problem out there. We used to have very, very consolidated IPOs, now we have very fragmented IPOs.

I have an alternative proposal that I could put forward. Instead of wider ticks or IPOs, I think there's some merit there, but I've thought about it some more, and I think the problem of higher cost of capital induced by wider spreads is going to be a big problem there.

I'm sure Frank's going to like this, have IPOs trade exclusively on a single exchange for a significant period of time. That's going to get rid of the fragmentation and give you consolidation.

Now, how do we take care of the liquidity? Rather than having wider tick sizes which lead to wider spreads, what we should have is a liquidity provider, someone

who's paid. A special type person who is paid to create liquidity in that stock. They're paid by the company. This is against the law in the United States, it shouldn't be. It's stupid for it to be against the law. It works without a problem in many countries in Europe, and we should do it here, and we should leave tick sizes alone.

Smaller tick sizes will result in lower spreads. That will result in lower cost of capital for these startup companies, and that will help them to expand more, and help the economy. I think this is a superior proposal to the one being put forth now.

With that I think I've suggested they have a tune up. I'm not sure whether or not it will work. Thank you.

MR. SPATT: It's a great pleasure for me to be here. I should say at the onset that some of the things I'm going to say you've already heard from the prior three panelists. My apologies for that. But, you know, I think this sort of reflects the nature of the issues that are currently getting attention.

So first I want to sort of step back a little bit and sort of ask some broad questions. Whom should we care about? This sort of relates to some of Doug's remarks. What's sort of important in the broad?

So the first observation I want to make is that one of the things that's striking to me about these issues is that we have all this discussion about equity markets, and not only on this panel today, but in the broader debate. There's a lot of public interest, a lot of public attention, and we're talking about tiny, tiny different. Yet incredibly little discussion about our bond markets.

Little discussion, and yet in some of the bond markets, particularly the municipal bond markets, spreads are extremely wide to the extent that regulators view their responsibility as focused upon protecting retail investors. Seems to me that there's a lot of scope at a first order level for more attention to the bond markets to transparency and other kinds of issues. While there's been significant headway in that space it seems

to me that a first order margin I want to point to is the different between bond markets and equity markets with respect to market structure.

I certainly agree that the welfare of issuers and investors is key. I also want to emphasize that it's not -- you know, that the folks who really weigh-in heavily in this debate are the platforms, the NYSE, the NASDAQ and other platforms. But ultimately the public policy decisions, seems to me, shouldn't really pivot upon whether a particular mechanism sort of fits one firm or another firm's business model. I think the trading issues here are important to the broader society.

Now, the platforms are most vocal because of the link to their business models. But interestingly sort of putting that aside, it's surprising to me how politicized some of the debates about equity market structure have been, especially given their technical nature.

The issues have been evolving, but it's also striking to me that these issues have been out there literally for decades. In a recent speech, for example, SEC commissioner, Mike Piwowar, pointed to the 1962 market design study undertaken by the SEC, and so you can see these issues have been out there literally for decades with a focus on equity markets.

I also think that it's important to emphasize the focus on EXANTE design issues. One of the things that's been striking is a lot of the turbulence associated with market design seems to be focused on glitches. Whether it's what happened, the Flash Crash or the problems that Night had or various other problems. Various problems. It seems to me the market structure issues are -- and our attention should be at much more of an EXANTE perspective.

Continuing at a broad level, and then I want to talk about a couple specific issues, I think it's important not to evaluate issues in isolation. A lot of times people kind of cut into these debates and express a view about a particular aspect of

market structure.

It seems to me that understanding the equilibrium responses of market participants is extremely important, and cutting in and tweaking or thinking about tweaking on aspect of market structure without considering the other aspects is a real mistake conceptually.

I also think that we clearly had, in the period of time when I was at the SEC as Chief Economist in the middle part of the prior decade, we had some really big changes in market structure in the name of regulation NMS.

Now, it seems to me that one of the first order of things one would think one would want to do before considering further changes is to try to understand what can we actually learn from what happened. Obviously NMS had big impacts on the nature of competition within and across platforms, on the whole issue of fragmentation versus centralization. It just seems to me that trying to learn -- you know, as they say in other contexts, we want to try to learn from history so we don't repeat the mistakes of history.

Probably the issue in market structure which has probably the most traction in the regulatory community right now is the issue of tick size. In part because of its relationship in the calls for study in the Jobs Act. So the SEC appears to be moving forward to do a pilot study. I think doing a pilot study is probably sensible, but I'm skeptical that this is at the root of the inadequate access to capital.

So in the remainder of my comments I want to talk up a couple of specific issues, and obviously this will overlap a little bit with what others have commented on, the maker-taker pricing model. I'm going to say a few things about that, and that will certainly tie to the earlier comments. I'll make a few comments about high frequency trading. Finally, I'll talk a bit about rapid cancellations and whether these are problematic, and related to the issue of flickering quotes.

The maker-taker model basically allows the supplier of liquidity to get

rebates and the demander to pay, but it's actually not quite that. It's not quite that the supplier gets the rebate, but his broker gets the rebate. And similarly for the demander. Well, as Dan pointed out then, there's some interesting empirical evidence that points out that the cost to the broker in terms of these rebates play a huge role. It seems to me that's reflective of an important conflict of interest.

Now, clearly, you know, traders should, even absent in conflict of interest, should adjust their strategy to execute on the opposite side to receive rebates. But it does seem to me that the maker-taker model does raise a lot of issues.

It basically transformed what appears to be the nominal tick size into something finer than that. That is in effect the tick size is not consistently being followed since the net prices are potentially inside the trading grid. Rebates are not available to all market participants, and they're often received by the broker rather than the customer. This creates an inherent conflict of interest in routing.

By the way, I should also note that the effective rebates and fees have grown -- the effect in relative terms at least, have grown considerably since NMS in launching the conflict of interest. Another way to say that is to the extent that basic spreads are down, but these maker-taker levels are similar. The proportional impacts of these are actually much bigger than in the past.

I just want to make a couple of observations about high frequency trading. I view high frequency trading at least as having the potential to enhance liquidity and speed of execution. Now, I know there's debate about this, and I think there's important legitimate issues. Clearly investments in speed are costly, and, you know, whether it's speed or co-location or various kinds of technologies. But it seems to me that it's certainly legitimate for those investments to then be compensated for with a return on investment.

Now, it clearly raises some issues of selection because not everybody is

going to have a comparative advantage in doing this. It's certainly possible that these investments in speed could be wasteful or dissipative. But I don't think it's enough to sort of just simply assert that, and to say we don't have to have pricing in the millisecond. It seems to me economic analysis has to go beyond that.

One has to really sort out, I think with careful thinking and methodology, whether these investments in speed are wasteful. I don't think it's so simply an assertion because of some seemingly common sense intuition that a fraction of a second is good enough.

I think some of the remedies that also people -- I think there are sort of better remedies and worse remedies in this space. So one remedy that I think would not be very good is the minimum resting time.

Basically by minimum resting time refers to a situation where a trader puts in an order and then he can't cancel it, let's say for a second or for some other fixed amount of time. The problem that I see with that is that then the order is then frozen and basically is ripe to be picked off by everybody else. I think that's going to potentially, severely undercut liquidity in the markets, and I really see that as problematic.

I think far preferable to that would be to introduce perhaps some noise in the timing process which I think would be a way to at least to diminish the import of timing.

Finally, I just wanted to briefly comment on some issues involving cancellations and flickering quotes. There's this intuition out there that there's a lot of very rapid cancellations. I think this is basically a very confused intuition. People point to flickering quotes. Well, in a rapid trading environment quotes are going to flicker, absolutely.

Even when I studies limit order data 20 years ago we saw that the spreads were moving in and out. I guess the time wasn't so rapid. That's a flickering

quote. That's inherent in liquidity provision. The bid and ask prices and not going to simply move in parallel. Often you're going to have a supply of liquidity on one side or the other side, and the spread is going to be moving around.

You can call that flickering quotes or any other kind of term you want. But just inherently the fact that these things are happening rapidly doesn't necessarily mean that it's a problem.

In fact, to make that point, I'm going to pose a question. Why are orders often cancelled quickly? It seems to me the intuition for this is quite clear. That basically people put in orders and then cancel them quickly simply -- well, they may have bad motives too, but I want to suggest a reason that doesn't involve bad motives at all.

It's simply an attempt to limit exposure when the order doesn't fill. So you put in an order you're hoping to fill. Now, there may be people who put in orders with no interest in filling. There may be people who put in orders whose fill rates are essentially zero. So I'm not ruling that out.

But I also want to suggest that even people who have good intentions, they may not have super high fill rates. They may have fill rates 10, 20 percent, 5 percent. Now why is that? Because you put in an order, you're trying to fill, but you're also trying to be cagey about it because you want to get good execution. You only want to fill conditional upon getting a favorable execution.

So you put in an order and the order doesn't fill. Maybe because conditions changed or because conditions didn't move in your favor when you put the order in. So what do you do? Well, now you're concerned that you've got this order out there, and you're not exposed to somebody picking you off. You're exposed, in effect, to adverse selection.

So what do you do? You cancel the order. Very simple. In the old days on the New York Stock Exchange they had a simple term for this. That's fill or kill. That

was a type of order that was an old order type on the New York Stock Exchange.

What was the purpose of this? That was for the customer. The customer could send down his order to the exchange and he could fill it, if he could, and if not it wasn't going to hang around. That was just embedded in the order type. Now, I don't know if that was explicitly counted as a cancel, but it's exactly the same economic function.

Now, one of the things that I've found actually very interesting that I learned from interaction with the SEC with respect to their MIDAS system is that, in fact, it seems that the order placements that the MIDAS system suggests that the order placements occur almost as quickly as the order cancellations. I think this is very sort of consistent with the type of intuition that I'm describing.

In equilibrium it's reasonable to expect a close connection between the speed of cancellations and executions. Indeed, that's what the data suggests we have. It is true that the speed of cancellations is somewhat great, but not dramatically so.

I want to suggest that the issue of flickering quotes and the extent to which people are cancelling is maybe not as much of a problem as many suggest. Frankly, the fact that the cancellation -- I think thinking about it from the point of view of the relative speed of placements and cancellations is potentially is a constructive way to think further about the issue.

All right. Let me stop at this point.

MR. BAILY: So try to remember to press your button to speak when you speak and press mute when you've stopped speaking. Thank you. We've had a very interesting, I think, set of presentations. I won't attempt to summarize, but let me give one reaction which was that, it's said that the markets aren't broken. So basically they're working very well. There may be some few tweaks that need to be made to these markets.

But at the same time I also heard quite a few of those tweaks discussed. So I wonder if I could go to you, Gregg, and just ask you to respond to some of the comments that were made here about some of the issues that may not be working perfectly, and whether the SEC is addressing these or whether you think these are not as important as were laid out, maybe I can be more specific or can you give a general reaction to the other speakers that you heard?

MR. BERMAN: Sure. So being by saying it goes without saying that obviously these are my own comments and don't reflect anything with -- in fact, they don't necessarily reflect anything on anybody ever. So that's a nice general statement to make.

If you look at where the big ticket items are, I often lament that we started with the equity concept release in 2010 and we laid out big questions. What is the nature and the impact of high frequency trading? What is the nature and the impact of off exchange trading? We asked a lot of questions. It's a great document. It's available on the website if you haven't pulled that down.

Then we have the Flash Crash. That really overtook a lot of the questions about, well, what do we think about off exchange trading when we have stocks going from $40 dollars to a penny, and then back to $40 dollars. So a lot of the emphasis and a lot of what we're trying to -- we tried to target things like investor confidence and market stability came out of what happened with the Flash Crash.

As we started implementing all of that, and all of that seemed to work fine then we had some of these more technical problems with the markets. Some are quite small, and most people don't recognize them. Others were very, very large. So we start focusing on those aspects of the markets themselves, the technical stability.

We have a proposal called Reg SCI. It stands for systems, compliance, and integrity. Out for public notice and comment. So we start down that path, and then

we have a hurricane. I recently put into a speech that I was writing, while we don't know what the impact of high frequency trading is necessarily, we're fairly certain that high frequency traders did not create Hurricane Sandy.

People struck that they said that, you know, can you demonstrate that for sure? I said, I can't footnote that. You know, I'm sorry. I can't do that. But that led to a whole other path of market integrity and market stability.

Along this whole way though has been questions about tick size. Has been questions about maker-taker. So all of those we're continually looking at. I think what you'll find is on every one of those topics at 10:00 in the morning we will meet with a whole bunch of participants who have a very, very strong opinion saying, you must do X. If you do Y, it's the end of civilization as you know it.

Then at 1:00 in the afternoon, after those participants leave and others come in they say, if you do X, you will destroy the world as we know it, and you absolutely, positively must do Y. So a big portion of what we're trying to do is really get ahead of that by saying can we look at something objectively.

I think a number of the panelists mentioned this already, we're not here to pick business models and say you win, you lose. That's not our role, and it's a very dangerous role to be in.

So what we have to look at it basically what some of the panelists showed on the slides is what works for investor protection? What works for fairness? What works for efficiency in the markets? Even if that actually messes up with one business model and biases another business model, but we have to take that type of objective stance as we're looking at the markets.

MR. BAILY: Thank you. Let me be a little argumentative here, but raise something that was in the Wall Street Journal article and ask Chester and the other panel members to respond.

In that article is an example that T. Rowe Price ran an experiment. They directed one of their brokers to buy 2.5 million shares of a heavily traded stock. Then they sought step-by-step account of how the broker made the purchase. They said to hide the purchase from fast moving traders the broker placed and cancelled many small orders all across the stock market creating "a dense smokescreen of phantom interest in the security, and in total the broker offered to buy 750 million shares of the stock while actually purchasing just 2.5 million."

So this is perceived by at least the folks at T. Rowe Price as creating a smokescreen of making it difficult, but I think you were saying that cancellations are not a bad thing, and that some of these things are not that important.

So any reactions to that sort of criticism, if you like, of the way the thing works now?

MR. SPATT: Well, I think that's a very good question. I think my views about that example are actually somewhat equivocal, and I'll explain why in a moment.

My views about the types of examples that I had in mind are completely unequivocal. In particular, what I was pointing out is that seeing lots of cancellations and high cancelation rates don't strike me as problematic.

On the other hand, you know, I've read in the last year or so about enforcement actions that have been brought against people who basically had no interest in basically doing any trading, and were just basically heavily using the cancellations to create a lot of smoke. It seemed to me that those enforcement actions, as an outsider, seem to me to be warranted.

Now, in this particular case I don't know that I know maybe enough about the nuances of the facts. I do think that a trader -- you know, my own view, is that a trader potentially putting on orders on both sides so that his intentions are less than clear should be a permissible practice.

Now, whether I'm sympathetic to scaling it up by a factor of 300, and whether they're doing actual executions by a factor of 300 that's less clear to me. But the basic notion that, you know, if I've got a big order that I ought to be allowed to do something a little bit more intricate than just splitting it up into equal sized pieces of exponentially declining pieces, and be out there as a sitting duck for the rest of the world to figure out pretty quickly what my ultimate size is. Then to kind of completely move the market against me instantaneously. It seems to me this ought to be a permissible practice.

Absolutely as investors try to minimize their price impact, and it would be a mistake to prevent that. But, you know, clearly when you're hearing of folks doing that on a scale of 300 fold, you know, obviously that raises real and legitimate questions.

MR. BAILY: Any of the other panel members want to comment so far, Doug or Dan?

MR. ELLIOTT: Yeah, I'd like to. I tell my student change the rules and traders will change their behaviors. Some of the regulators, not necessarily the ones on the panel, but regulators in general seem to forget.

This whole issue of putting orders in and then cancel came up when the Toronto Stock Exchange, on their CATS system, switched from price time priority to price pro-rata sharing. Which means you got a portion of every incoming order if you were on the book, depending by how big your order was.

So we did a study of that, and what happened after they switched from price time to price pro-rata sharing, the size of orders went up. They inflated their orders because they wanted to get the whole order filled, and they couldn't do it just by going to the end of the queue. Now they made bigger orders to -- when they got what they wanted they'd cancel the rest of the order. So order size went up and cancellations went up. You change the rules, you're going to change the behavior. It's exactly what T.

Rowe Price found.

MR. WEAVER: Let me just make a very general statement. First, something that struck me about all the other speakers is they correctly showed how little we actually know about how many things in the market work. That we have a very general idea, but we don't necessarily have the facts on it.

There's an inherent trade-off between giving some protection to large orders to allow us to have large sized asset managers and institutions, which is a desirable thing, and the potential problem that they don't want to get picked off. Therefore, they are going to do a bunch of things that disguise the intentions.

This is an inherent issue. It's existed for decades, if not centuries. Deciding what the right trade-off is probably requires us to understand much more empirically than we do what those trade-offs specifically are. Then we can decide if -- it strikes me if the smokescreens are as big as was described in that article then probably we've gone too far in that direction in whatever makes that happen. But I don't know exactly how to judge it.

MR. BERMAN: If I could make just one point because I think that the quote from T. Rowe Price and the discussion in the article is actually very, very germane, but I think, Doug, as you mentioned, a lot of these are nuanced and subtle issues, so not everybody may know the distinctions between the types of cancellations.

So over the past few years the focus on cancellations has been from liquidity providers. It's been from the concern that high frequency trading firms are putting in orders and they're cancelling it. That they're not really providing liquidity, and we've heard a lot about different opinions on that.

The article and what T. Rowe Price has mentioned is not that. It's not that at all. It's, in fact, it's exactly what I was saying during my opening remarks, that it's what the buy side institution is doing through their broker dealer to basically say, well, we

can do that same game as well or we can play that as well.

So if we're just looking at cancellations in the context of those who provide liquidity there's the other side of that which is the algorithm that they used to try to place a very, very large order.

I don't know the exact facts, and I don't know if it's really 300 to 1 or what that is, but clearly when a large institution wants to place a large order they want to prevent the rest of the world -- they want to go to the nudist colony with their clothes on, so they want to have the best of both worlds.

Now, there are many studies that are out there, many studies, that try to measure the concept of price discovery. That's the purpose of the markets, to bring buyers and sellers together for price discovery.

What is price discovery? Price discovery is when everybody stares at each other and tries to discover what the real price of something should be based on the needs of people who want to buy, and the people who want to sell.

We have many people who come into the SEC and pound the table and say, I'm very concerned about price discovery. Price discovery is not working. By the way, I would like to buy 500,000 shares and I do not want to move the market.

So there is a conflict of interest between those who want price discovery for everybody else, but do not want price discovery for themselves and for their own orders. A critical aspect of this, that unfortunately I don't think we know, is what is the real price of buying 500,000 shares of a large cap stock or 50 shares of a small cap stock?

Everything we do is measure relative. Maybe the price of buying 500,000 shares of Microsoft should -- it should move Microsoft 5 percent. Maybe that's what a theoretical model would show, and anybody who gets less than 5 percent movement you should consider yourself quick lucky. But we don't know that.

Everybody basically -- it's a blinking game. You stare and you try to hide what you're trading.

MR. BAILY: I thought about various things would could be discussing today. I didn't think nudist colonies was going to be one of the main features. You had a quick comment you're going to make, and I wanted to ask a question a little bit about IPOs also, and I want to throw this over to the audience. So can I ask for just quick --

MR. SPATT: One quick follow-up up. So I think what a number of the comments highlight is that traders are -- you know, and most directly to follow-up on Dan's point, traders are responding to the mechanism as they perceive it.

I would just reiterate that traders have a legitimate interest in trying to protect their customers. So I think as we interpret examples like this we should certainly keep that in mind, but that's not to defend 300 to 1.

But on the other hand, to take the other extreme, to require traders to simply trade in the direction of their net position, so that they're going to lose lots of value to the leeches in the system. That seems to me a ridiculous standard.

MR. BAILY: So let me ask about IPOs, and please, in the audience just think about some questions. I'm going to throw it open to the audience.

IPOs are somewhat dear to my heart. We have a recovery that's been slow. One of the missing links in that recovery has been in the number of new startup firms. What are the motivations for companies? They startup and they may want to go to an IPO.

Doug said, and I want to quibble with him, that the equity markets are a major source of capital. Well, yes and no. The number of new issues actually tends to be less than the number of share buy backs. So at net I don't think we get a lot of new capital from the equity markets.

But the ability to trade and the ability to do IPOs, I think is particularly

important. So do we think that the current market structure or the current level of regulation, as has been alleged by some people is inhibiting the number of IPOs, and if so, what can we do about it?

MR. ELLIOTT: I'm not so sure it's inhibiting. I think that we've gotten a point where it's difficult for IPOs to get liquidity. People don't want to get involved in an IPO unless they know they can get rid of the stock. So the market has changed, and we haven't changed the rules for IPOs.

I think that increasing the tick size for IPOs is in the right direction, but I think it might be -- after I thought about it some more, I think it's a bit misguided.

MR. BAILY: Is there nothing you think the SEC is thinking about? I know that there may be limits to what you can talk about, but is this an issue that you're concerned about?

MR. BERMAN: So IPOs in general as part of the capital formation process, capital formation is one of the central tenants of the SEC. So yes, we think about this all the time, both for capital formation through the equity markets. And I think as others have mentioned, to the non-equity markets. For the fixed income markets as well.

The idea behind the tick size did come from the Jobs Act, and we've had roundtables on that, and there is quite a lot of activity going on both in the industry and at the SEC. I think a number of commissioners, our chair, has expressed the desire for a pilot to see what would happen.

I think there are different interpretations of what a change in the tick size might mean, so the original hypothesis that goes back to the Jobs Act was if you raised tick sizes there will be more liquidity. There's more liquidity. There's larger prices that market makers can -- larger profits. Those profits in turn translate to more research which in turn turns into more interest and the cycle continues.

I think at our roundtable, and quite a number of people have said, I understand and can conceive of the first part, but not so sure about the second part. But you don't have to necessarily either be for or believe the second part to at least test out the first part. So a lot of the market's been now concentrating on if you change tick sizes there might be more liquidity that becomes posted at a wider tick size.

We've been doing a lot of preparatory work to try to measure what the effect might be. Part of this if you're going to do a pilot it would be really good to know what you're measuring before you start the pilot, and not wait until the end of the pilot so everybody looks at each other and says, by the way, so did it work or did it not work?

So we're doing a lot of the prep work, and a lot of the prep work is actually showing something that I bet you very, very few people in this audience know. Which is that most of the liquidity is posted today away from the MBBO, not at the MBBO.

Which puts a big question on would you rather have a market structure of 500 shares posted at one penny away, and 4,500 shares posted 0.02 cents away or all 5,000 shares are posted 0.02 cents away because 0.02 cents is the minimum and you can't post at 0.01 cent.

What our data is showing, you'll see more coming out of the SEC on this in the upcoming months, is that there's a lot of liquidity that's already posted away from the inside. So I'm excited about the potential of the tick pilot, maybe for different reasons, which is I think it's going to illustrate something about the market that is much broader than even maybe just what's going on with IPOs.

MR. BAILY: So I'm going to throw it open to the audience for some questions. We do have microphones. There's one on the side there, and one at the back, so please wait for a mic. I'd like you to identify who you are, and please pose a question, a relatively short question. So let me ask the audience to ask some questions. Yes, the question here.

MR. HATHEWAY: Frank Hatheway, NASDAQ. Just to start with Gregg, and I'll talk about cars rather than nudity. So these notions of the market being broken and the market being complex, my first car was built in 1968. I could open the trunk with the key. That was the only way I could open it. My current car is much newer. I can have a remote switch inside. I have an automatic on the remote. I can open it with a key. Automatic function on my trunk does not work. I can only open my trunk with a key. So the first question, is my car broken? All right?

Then on the notion of complexity, that first car didn't have a lot of parts. It had no GPS. It didn't talk to me. It didn't move the seats up and down. As the market gets more parts, if there is a standard probability of a failure, of a fat finger, doesn't the fact that my new car has a lot more than my old '68 one essentially mean it's more likely to have something broken, whether we consider the whole thing broken or not?

MR. BAILY: Who wants to take that one on? Gregg, it had your name on it, but others can certainly speak up.

MR. BERMAN: So I think you bring up an excellent point. So I think that, yes, when you have more complexity there are more aspects of things that can break. So I think the question is correct, but I'd like to then hold up those things and see so what is broken when we have these failures.

I guess I would argue that you can open up the key or with these hundred other methods. But what if you actually found that the problem was with the key, it was the key mechanism. The same mechanisms that existed 50 years ago, that was the thing that kept breaking.

I think what we sometimes find is that, really? That's the thing that is breaking? It's actually not these other fancier things that are the things that are causing complexity, but it's not the complex things that are breaking it's the simpler things.

The other point I would make is the complexity has to be put into the

context of what does it give you? So people want GPS in their car. If you had a car that had no GPS. That did not have an automated lock. That you couldn't open it up by swiping your foot underneath the trunk so it pops up, which I'm going to buy because it just looks really neat. But you had all of this electronics and you still needed to use a key then that would be needless complexity.

So a lot of the complexity that's in the market -- one question is, how much of it is needless? It's just noise. It's complexity for complexity sake versus how much of it is that's what people want.

I mean, I've done this many times, but damn, this is complicated. This phone can store all of the quotes from every market on a given day. Can't store two days. It runs out of memory. I can do everything including make toast because it gets very hot and you put bread on it.

So the complexity is driven by what people want, sometimes, and we have to consider what the nature of the complexity is.

MR. BAILY: Another question? There's a question here and then I'll come to you.

MR. ALLEN: Jim Allen with CFA Institute. Chester, in particular, you were talking about some of the issues and conflicts of interest with the maker-taker models. Your predecessor, I think at the SEC, Larry Harris, has suggested that, in fact, the SEC should maybe do away with maker-taker model. That would A, sort of take care of the conflicts of interest, but wouldn’t deal with the price competition among the exchanges. What do you think about that proposal?

MR. SPATT: I'd be relatively sympathetic to that. I think eliminating maker-taker may be about the simplest way to deal with this conflict of interest.

You know, I think some conflicts of interest seem to be to be secondary, but in the case of the routing decision, I think the problem is that the routing decision

seems to be driven -- you know, and think the paper that Dan mentioned really provides strong evidence of this, the routing decision seems overwhelmingly to be driven by the maker-taker model, and the potential for conflict of interest.

So I think it does raise a lot of questions. I think it raises questions too about the nature of our tick size, and whether the tick size is what we're saying it is or it's something else.

So I'd be relatively sympathetic to moving in that direction.

MR. BAILY: What about you? Do you agree with that?

MR. WEAVER: I'm not so sure I'm sympathetic to that. Payment for order flows is around forever is what you've got there. I think that if we get rid of maker-taker model we also have to get rid of internalization because as long as I can partition order flow into informed and uninformed then I can make extra money.

So maybe one way to do it on maker-taker models is to require them to take all order no matter what their -- I'm sorry. The dark pools, for example, are accepting order that are only small retail orders. I think they'd be better served if they took all orders like a specialist or a market maker would.

MR. BAILY: We had a question there.

MR. TRICCHINELLI: Rob Tricchinelli. I'm with Bloomberg BNAs Security Regulation in Lower Port. I wanted to ask on tick sizes, there's a bill in Congress. It came out of committee unanimously, full House might take it up soon. It's a five year program to increase the tick sizes on -- where small emerging growth companies can chose to be traded at a five or ten cent tick size.

I'm curious if you've been following the bill? If you have any comment on the merits of what it would do?

MR. BERMAN: Well, I haven't been following the bill closely. I think my own view is I would much rather have the professional staff at the SEC design the pilot

then have Congressmen design the pilot.

Indeed, in one dimension that you refer to, the issue of allow the companies to choose, I could well imagine a pilot that would be designed by the staff might involve some greater degree of random assignment.

If certainly that was the case, what we would learn from the pilot would likely be significantly greater than one that had a massive amount of selection bias.

MR. WEAVER: I want to address that. I want to go back to something Gregg had said as well. When you increase tick size you're going to increase spreads. When you increase spreads you increase the cost of capital. That's counterproductive. I'm not so sure that will work.

As far as IPOs are concerned, and small companies in particular, we keep adopting the attitude of one size fits all, and that's absolutely false.

Gregg talked about a company that has 500 at the inside and 4,000 two cents away. That's great. Chester, remember back when we reduced tick size? All the discussions about all you're doing is taking all the liquidity at the wider tick and distributing it down, and we really needed -- there were some papers that summed them all together.

That works for large well capitalized stocks, but small companies, were not talking about 500 at the inside and 4,500 away. We're talking about 50 at the inside -- or 50 away and nothing at the inside. These small companies have no liquidity. It's not a question of it's there we just have to find it. They have no liquidity.

The best way to find that liquidity is to adopt exactly what they've done in Europe which they have a liquidity provider who is paid by the company, the people who are going to benefit the most from this, to provide liquidity.

For example, in Stockholm, they get to negotiate with liquidity providers to decide on what spread you would like and what depth you would like. I think that is a

preferable to increasing tick size, and I think that we ought to do away with that stupid law that says that you can't pay a market maker or specialist in the company.

MR. BAILY: Thought on that, Gregg?

MR. BERMAN: Yes. Just two follow-ups on that. The example I gave with the liquidity inside, and I think this is going to surprise a lot of people that that actually holds for small companies as well. It's just people don't look.

Now, when I say 500, maybe it's not 500 at a penny, but it's 50 shares out at 0.15 cents, but 300 shares out at 0.18 cents. But if you only look at the 0.15 cent and not at the 0.18 cent then you're missing something.

So I think what we're seeing that the dynamics, especially for small cap stocks, are much more complicated than just looking at the inside, especially if the inside is actually at 0.15 or 0.20 cents. Because then the idea of doing a 0.05 cent tick actually has a different dynamic then doing on a 0.01 cent tick.

So the point is that it's actually complicated, and that's why sometimes pilots are interesting because they help pull these types of things out.

On your follow-up comment about the issuer pay, I guess I would say that, you know, a lot of rules in the equity markets actually aren't SEC rules. They are SROs. They are rules by the exchanges themselves. Over the last year all of the listing exchanges have put forth exactly what you have suggested and they've been approved.

They've been approved on a pilot basis to see what will happen. The SROs put that forth for exchange traded products, not for individual companies. Though in many of the orders that they had put forth in the rules, they had said, let's look at this. This works good in Europe for IPOs and for companies, but they are choosing to do this in ETFs right now.

So there's a different between saying that one should prevent something from being banned, and one should actually force something to happen. So if SROs

came and proposed that then that would go out for comment. So it's not necessarily that this is not allowed.

SPEAKER: I'm just curious. Maybe Daniel and others have information on this. What you're describing sounds useful and interesting to me, but clearly that's also an increase in the cost of capital. Basically that if a company is going to have stock out there then there's this continuing cost it's going to bear.

Have you done or seen studies that have compared the potential increase in cost of capital from that to the increase cost of capital from the present system?

MR. WEAVER: Yes, we did. When we studied what happened in Stockholm, essentially a list of companies can decide this like they would net present value. They look at the pluses and minuses.

What we found is that even companies had very wide spread -- companies chose this because they narrow their spreads. Spreads went down by more than half when they chose this model.

But not everyone chose too because it's a negotiated contract, and some of the liquidity providers are charging so much because of the problems with the company that it just would cost more than the benefits they would receive.

And so a company's going to do an analysis, and my -- exactly what you're saying. Am I going to get more than it's going to cost me? If I will I'll go ahead with it. If not I'm not going to. So it won't help everybody, but it will help a significant amount of companies.

MR. BAILY: We have run out of time. I want to thank the panel for terrific presentations and discussion, and thank the audience for their questions. We have a second panel so stick around. Don't go anywhere. We're coming up with the next panel. Thank you.

(Recess)

MR. ELLIOTT: Okay. Good morning again. We'd like to start with the second panel now so, please though of you who aren't taking an emergency break please sit back down. And it's probably obvious I'm moderating the second panel. This is going to bring representatives of different segments of the industry to give their views.

We will lead off with Brian Conroy, President of Fidelity Capital Markets, the institutional trading arm of Fidelity Investments. His full bio and those of the other panelists is available outside if you do not already have it so I won't go into his distinguished career. Brian will be followed by Ari Burstein, the Senior Counsel for Capital Markets issues for the Investment Company Institute. Thomas Wittman will follow. He's a Senior Vice President at NASDAQ OMX and Head of U.S. Equities and Derivatives for the Group. And finally we will hear from Jamil Nazarali, Senior Managing Director and Head of Citadel Execution Services. We'll follow the format of the first panel. Each of the panelists will make their prepared remarks; I will then moderate a discussion with them and followed by chance for the audience to ask questions. So with that let me turn it over to the first panelist, Brian Conroy.

MR. CONROY: Thank you. It certainly is an honor to be here today speaking to all of you and amongst this quite distinguished group of fellow panelists. I too woke up this morning and didn't expect to have several conversations around automobile issues or nudist colonies or some of the other things that we've discussed already. Certainly, you know, Doug's opening comment which he mentioned things can get technical real fast, I think we witnessed that today. But as a former religion major and football coach I'll try to keep it pretty high level which is usually where I live for the benefit of all of us.

I'm going to throw out a few terms because I think these terms are really defining the discussion in the marketplace today for better or worse. HFTs, dark pools,

flash orders, too big to fail, speed of trading, market fragmentation, tick sizes, algo trading, payment for order flow, etcetera. What these words are doing, what these phrases are doing are skewing in many ways the debate around what is the marketplace today, how is it relative to the rest of the world and relative to where it has been. Well, I think when you look at the rest of the world as a percentage of GDP there's twice the notional value traded in the U.S. than the rest of the world on average. So I think that speaks to is -- one of the panelists said earlier, you know, liquidity is one of the cornerstones of the marketplace. So clearly in the U.S. versus the rest of the world there's quite a bit of liquidity. Also when you look at various market impact statistics, you know, we are also either at par with or certainly far ahead of other venues. So when you look at the U.S. versus the rest of the world I think it's a reasonable conclusion to draw that we in fact are the envy of the world with respect to developing nations, broad based markets and equities.

And then we look at what's happened to the equity market over the last 10-20 years. Surely it's very hard for anyone to argue that we're not in a better place. You know, I think as Doug mentioned in his opening statements better doesn't mean best and certainly there's always room for improvement no matter how far the gains have come over the last 10 years. But when we look at average daily volume again it's more than double over the last 10 years. We hit a peak, you know, about four years ago and we've come off that peak but, you know, certainly, you know, 4 billion in 2003 and 9.5 billion on average is greater than 100 percent increase. You know certainly the speed of execution has come down for better or worse. We talked about -- the first panel talked about the pros and cons of speed but, you know, for a retain investor in 2003 it took over 14 seconds for an order to leave the retail investor, enter the market place and get an execution back. Now it's just about 1.4 seconds. So an improvement of 90 percent over 10 years. And they -- any of our customers at Fidelity would say that that's a, you know,

a tremendous benefit that they have received over the last 10 years. And we look at commissions in a variety of ways. Commissions are down 62 percent for the retail investor.

So I keep referring to the retail investor, I want to take a side note and just say that, you know, we at Fidelity are proud of the fact that we are both a large asset manager -- I think which most people know we're one of the largest mutual fund companies in the world -- but we're also one of the largest on line brokerage companies in the world. So we believe we bring a unique perspective to this argument that few other firms can do. We also feel that no matter what the market structure is we can adapt our practices to deliver superior executions for both our retail investors and the institutional side of the house which again is representing tens of millions of investors in our mutual fund. We do not have a proprietary trading model that's dependent upon one market structure or another. So while we are a for profit business as the other panelists in the second group are, you know, we share I think a similar view that as the FCC and the academics in that we as Gregg Berman mentioned in his opening statements, you know, are advocates for the right structure. We're not advocating one structure or another just to support a business model. You know we feel we can adjust our mission to work on behalf of whatever the business -- the structure is. You know we're really out for the retail investor and it's a voice that we feel is under heard in the market place.

So going back to, you know, the overall market conditions, you know, we in general feel that the market place by all measure -- by many measurements, not all measurements is in a good place both relative to where it has been, and we can certainly get into the details of that, and relative to the rest of the world. So given the terms that I've opened with what is the state of the market? We feel it is in a good spot. We also support, you know, some of the discussion that's come up recently around a holistic market review. We are very careful to advocate against any dissection of various issues

in the market place that would potentially draw from, you know, the overall market place that is today. And that we think is a big risk that should be not managed on one spot or another spot but certainly collectively by the industry and the regulators.

We also talked -- the first panel also talked about transparency. You know, Professor Weaver mentioned the concern, the conflicts of interests of intermediaries. And we of course as a brokerage company on behalf of retail investors are routing our order flow to market centers, to market makers and we're going to hear from one of the market makers in the second panel. We have an obligation and a duty to find the best execution possible and we have to weigh a variety of things. Some of those are the stability of the counter party to whom you're sending your order, part of it is the trust that the market center is going to execute the shares that are displayed when you send them that order. So there's a variety of things that we look at. And we also publish on our website how much of the spread we capture and give back to our retail investors. So the average retail investor is paying $7.95 at Fidelity on line and on average for 1000 share S & P 500 stock we're repatriating almost 4 and a half dollars of that commission in improved performance back to the retail investor. So it's something we're very proud of and something we think is, you know, under spoken of in the industry and we would be advocates of bringing this more to the light so that the retail investors in fact could have a more transparent view of their executions.

You know the first panel also talked about tick sizes in the context of new issuance and IPOs and, you know, we'll attack each issue as its own but do definitely see a correlation. When it comes to tick sizing and capital formation, you know, we think one of the advantages of the tick size increment being a penny is the opportunity for spreads to be smaller. We think that benefits the retail investor. You know, in my experience as a trader over the last 25 plus years I can tell you and many of the evidence supports it, that small cap stocks were difficult to trade in 1990, they were difficult to trade in 2000, they

are difficult to trade today. Now statistically there are variations depending on the time frame you look at, the market cap, etcetera, but clearly I think we can all assume that statement is factually correct, that these are just a difficult market to trade. We don't necessarily see the correlation of tick sizes to difficulty in trading, what we look at is the, you know, clearly rate and market cap, the float and the concentration of ownership. And many of our portfolio managers on the asset management side, you know, when they're investing in a, um, uh a pre IPO company they understand that that investment has no liquidity. Conversely when they're, you know, investing in one of the mega caps that exist globally there's tremendous liquidity given the size of the order. And of course the spectrum goes all the way in between. I think it's important to focus the argument on the fact that, you know, these small cap companies, right, present great opportunities of upside but with that comes the encumbrances of, you know, concentration of ownership, limited float and therefore reduced liquidity.

But when it comes to capital formation we agree that it's important that this is an issue should be looked at. I mean what we'd like introduce is the fact that maybe it is something other than tick sizes. Maybe in fact it's actually the capital formation process itself. We've drawn some parallels back to 1995 and I think you'll find these facts interesting. In 1995 the average underwriting spread for an IPO in the 100 to 500 million dollar range was 6 percent. Today it's 6.6 percent. So you heard my earlier statistics about over the last 10 years the improvement in equity execution, the speed, the spread, you know, condensement, the, you know, the cost to trade for the retail investor. At the same time the underwriting spread has gone up. This at the same time we've seen an absolute revolution at e-commerce bringing buyers and sellers together in a much more efficient manner. So at the lower end of the spectrum we've begun to see crowd funding proposals and other mechanisms to bring buyers and sellers together in a much more efficient manner. And yet the actual process for bringing companies public

today in the market is not only more expensive in some cases but it also is the exact same process where it's non transparent allocation of orders and allocations for -- the night before the IPO. There's a very laborious process of taking these companies around physically into the market place at a time when most goods and services are sold over the Web today. You know very few goods and services I think that we can all point to in our personal lives are unaffected by the march of e-commerce and certainly the IPO market is one. So we would suggest looking beyond just the empirical data and the discussion of tick sizes, etcetera and really look at the capital formation process itself becoming more transparent and more open. And that might, you know, decrease the concentration of ownership of some of these issues, it might increase the awareness and it might move forward. Certainly something to think about. Thank you.

MR. BURSTEIN: All right. Well, good morning, Ari Burstein, I'm Senior Counsel at the Investment Company Institute here in Washington, D.C. I think I'm the only geek on my panel to do slides but I'll whip through this given that a lot of the issues have been discussed already. But it's worth probably taking 30 seconds just to talk about who ICI is and why I'm up here for those of you who may not know. So we are the National Association for the Registered Investment Company industry. So mutual funds, ETS, close end funds, UITs. There reason I say that is we don't represent hedge funds, we don't represent private equity funds which does really play into how we look at market structure and trading given the way our members trade. Why is that also important? Well, our members represent -- have total assets of 16 -- over 16 trillion dollars, represent 98 percent of all the assets of U.S. mutual funds and maybe more importantly we represent 96 million shareholders and over 57 million households. Again why is that important? You heard from Brian about the retail investor, you know, and their views on market structure. There really is a lot of debate about when we talk about market structure -- and we'll get into this in a few minutes -- about protecting the retail investor

and that is a big issue at the SEC but I think there -- the lines have become more blurred over recent years and again we like to say and we talk about this a lot in Washington, we represent the retail investor as well. Again we don't trade proprietarily like other folks on the buy side. So that plays into our views as well.

So what is our views on the market structure these days? You've heard a lot about the complexity of the markets; I think we agree with that. The markets have definitely changed very quickly over the years. That's not necessarily a bad thing. Overall this has benefitted investors. Again every time -- we're based here in Washington but every time I'm here I Washington or I'm around the globe in Brussels talking to Europe or Asia we like to start off and say this has benefitted investors. Investors are not doing badly, the markets are not broken as Gregg Berman said earlier. I think there's some confusion about, you know, the need to protect investors. Again things have gone pretty well over the last few years. Costs have come down, we have more trading tools at our fingertips; technology overall has brought good advance for our mutual funds and other investors.

With that said there are some issues that we have been concentrating on on the buy side that we need to take a look at. You know, there -- it is difficult for the SEC -- I was an SEC attorney, left about 15 years ago. It's incredibly more complex than it ever was when I was there so have sympathy for Gregg and his colleagues but regulations have not really kept pace with the technological advancements. The other challenge for us is there is a general lack of understanding I think of how these issues impact investors, how they impact the buy side. And that's really key. So I think it was alluded to in the first panel that the different constituencies, you'll hear from it after me, the exchanges, the brokers, a lot of folks on the sell side are in saying what is good for the investor and then regulations come out, we end up trying to be a little bit proactive. Sometimes we're playing the reactive game but getting in there and saying well, that's

great but here's how it really does impact our members and trying form the regulations that way.

So one of the key issues that we're looking at on the buy side right now -- again some of this is being a little reactive, some of it is proactive -- talking a lot about -- and again these issues are not new as you've heard already, some of this has been around for years -- all the issues around dark pools, the whole lit market versus dark market debate, what's good for investors, what's good is not. What I think is the most interesting discussion that we're having right now with market participants is as you've heard -- I'll say potential conflicts of interest in order routing and execution. We'll get into that in a second. The hot topic obviously right now is decimalization -- you've heard about that already -- tick sizes, and the issues that won't necessarily go away, all the issues around technology, high frequency trading, use of algorithms, automated trading.

You know when we look at all these issues I think it's also important to keep in mind you've heard a lot about this already, some of the tradeoffs that need to occur and some of the things that we've been really pushing the regulators and other policy makers to do. So need to base decisions on evidence and research. Again that is really key. You know, I sympathize with a lot of folks on the sell side who get frustrated around new regulations because they're not necessarily based on evidence. We've been trying to do our own research on the impact of investors and really help out the regulators. Again I mention protection of what investors, retail, institutional or both. Again the lines are blurred. I think that's really important to keep in mind when you look at all these issues.

Competition while ensuring transparent and liquid markets. Again it's interesting from a buy side perspective. We love competition. It's good for us, it brings down costs but, you know, do we need 50-60 plus trading venues in the markets these days? Probably not for our needs. So that impacts transparency, that impacts potentially

how liquid the markets are.

Innovations, safety and soundness. Again protection of investors is really key. You know, "glitches" is the hot word these days. There are glitches probably almost every day that you hear of it, you may not hear of it. You know the thing that is of concern to us is when I hear from our members, whether it be Fidelity or T. Rowe Price was mentioned earlier or -- on and on that they're getting calls from their shareholders saying are the markets safe, are they not. You know, so again that's something to keep in mind whether, you know -- how you deal with it is another story. And then capital formation again tick size is -- that's gets to it.

So just to touch base on a couple of the topics from our view. You know obviously you've heard a lot about dark pools, examination continues around dark liquidity. You know, I think there are a couple of challenges you've already heard about. What is the impact of dark liquidity on price discovery, is it actually harmful to investors or not. Again, you know, we sit back but we hear, you know, whether it be the exchanges say oh my god, you know, we need to get everything into the lit markets or more into the lit markets. It's increasing, it's really harmful to investors. And on the sell -- on the brokerage side well, not necessarily, you know, it's not really hurting investors. We try to -- we're semi agnostic to this. Again, you know, we need I think both types of trading venues but it is a difficult discussion to have. You need to find out exactly how much percentage of trading is occurring in the dark. Again numbers are bandied about, 30 percent, 40 percent. Whatever it is I think when you start parsing through those numbers you see that some of this is broker/dealer internalizations, not necessarily traditional dark pools. I think that argument especially in Washington gets sort of blurred.

And then what are the implications for funds trading. You know, on -- realistically we are huge users of undisplayed liquidity, we always have been. Whether before the traditional dark pools that are being talked about now when you just had the

exchanges, you had so called reserve orders, you were hiding orders so to speak through floor brokers, whatever it might be, for our members, for the large asset managers, institutions, dark pools are key. With that said, you know, we do recognize all the debate, the discussion about getting orders into the lit markets. Would we love to see more orders go into the lit markets, absolutely. But under the current market structure, and I think it was alluded to on the first panel, would any of our asset managers show $100,000 or a $200,000 share order to everybody in the world, no. What do dark pools do? They help up sort of, you know, hide that order for lack of a better word, get that done without the market impact so therefore, you know, again dark liquidity is key.

So what do we support here? Again we've supported incentives for market participants to use lit markets. We've been working with other folks that you'll hear from after me and other market participants to get more orders into the lit markets. With that said, again you've heard this before earlier today, yeah, we'd love to, you know, hide our orders but see what everybody else has, that's probably true and I've probably put that into numerous comment letters I've written over the past 15 years, you know, but it's a little more nuanced than that. You know we support exceptions for pre and post trade transparency. Do we want to always hide orders forever? No. I think we've commented years back on the proposal -- I guess, you know the SEC never went forward on some more transparency and dark orders. You know maybe for a large order that may not have that much impact maybe you keep it non transparent for a few hours, maybe the end of the day, maybe for a less liquid stock maybe until the next day. But again to reveal that, you know, in real time is -- probably would not work out best for us and then wouldn't work out best for our shareholders. So again it's a little more nuanced than that.

Very quickly on a couple of other things, the potential conflicts of interest, again I think this is the most interesting discussion we're having right now. You know

we've heard -- and the thing I have up on the slide is something I hear from our members -- have economics as opposed to price become the focal point in routing execution? Have we gotten to that points in our markets? Is that good for the markets, is that not? Maybe yes, maybe no. I think it's a little more complicated than just looking at liquidity rebates that we've heard about, the make-or-take model. There's other things that fit into this, order types that are being provided by the exchanges, access fees that are being charged out there, broker/dealer internalization, and in our discussions with market participants and trying to come up with a potential solution again you can't look at this in isolation. There can't be just a look at make-or-take, decide what to do there and think it's not going to impact other things in the market. So we're thinking about how to address all these things potentially at once.

You know, do you need a pilot program around that, we would probably support that. Once you starting talking the details of a pilot program it gets very difficult. Yes, there is a need to determine the impact on liquidity and price discovery, maybe a pilot program would do that. What are the regulatory solutions? Again maybe it is a pilot, maybe it is transparency. Maybe if investors like our members or other investors knew more about how orders are being routed and executed that may change behavior. That may be easier to do than spend the few years kind of taking a look at a pilot around eliminating or reducing liquidity rebates or access fees. Again we've been meeting with market participants on this, there's other proposals out there. FINRA has a proposal increased transparency around dark pool trading that I believe was just approved about a week ago. And also development of new trading venues. What I mean there is there's been attempts, probably not successfully but to create new trading venues just for our members, for the buy side, for the big institutions that trade with each other, you know, to get at some of these issues, that they won't charge rebates. Unfortunately I don't think they've attracted the liquidity to make them successful.

Decimalization, tick sizes, you've heard about all the issues. I'll just kind of whip through this. There is legislation out there that was alluded to in the Q & A on the first panel. There is other task force reports that are out there saying that we should widen tick sizes, a letter from Citi suggesting that there's a subcommittee of the SEC Investor Advisory Committee which I believe is meeting actually tomorrow morning to discuss their recommendations. Basically everything is to create a pilot program. We support very generally a pilot program on the buy side at the ICI. Again we're working with other market participants to try to shape the parameters around that program. We would rather have the SEC, you know, take a look and shape that pilot program than necessarily other folks outside of the regulators. You know, we can debate whether or not some of the parameters that have been bandied about are correct or not but again experimentation is probably good.

And then last but not least HFT technology. I'll just touch on that because again I think every conference I've been to HFT is a topic de jour. (Coughs) Excuse me. You know, again there's no doubt technological developments has an impact on how we trade, how funds trade, HFT, we use algorithms, you know, number of types of alternative trading venues out there, you know, there's the continued focus on the disruptions. I guess from our standpoint again it really gets to investor confidence. We really do support regulators and policy makers looking at sort of the systemic risks that are out there, dealing with risk controls. But again it really does make -- it really gets down to in our minds having robust risk controls in place on the sell side, whether it be exchanges or brokers. And even our members need to take some responsibility to that, just making sure -- there's ways to deal with, you know, any errors that occur, fat fingers, etcetera and the like.

And again, just to end off with HFT, we have never been against high frequency trading and let me, you know, let me state that again. I think HFT has kind of

been beaten down with this whole argument but there was a lot of confusion. Well, the asset managers must hate high frequency traders. We don't hate high frequency traders. There are some issues I think that we focused onto, primarily is the cancelled order debate. Yes, our members have said that, you know, if someone's cancelling 99 percent of their orders and maybe they had no intention of ever executing those orders in the first place that's probably not a good thing. Does that tax the markets, does that add to systemic risks, the -- to the technology disruption? Possibly. So we need to deal with that. We've thrown out there potentially a fee or a penalty around over a certain ratio of cancelled orders as I've been looking at in other jurisdictions around the world. That's one thing. The other thing is abusive and manipulative practices. Again I think regulators need to take a closer look at the definitions of what is abusive, what is manipulative. There's a lot of gray area out there and that's the other thing we're concentrating on. But other than that again there's no definition of HST that's been put out there. In some definitions we are high frequency traders as large asset managers. So I think there's again confusion that needs to be dealt with.

That said I'll stop there and address any Q & A.

MR. WITTMAN: Do we have any football fans out there? Especially this weekend? So as I was preparing for this presentation more so the panel I was having anxiety about being asked questions like my colleague Frank asked one of the panelists. And I was looking forward -- and then of course I'm a bit of -- I'm a Denver fan -- I was thinking about Peyton Manning, I'm just going to yell out "Omaha, Omaha". If that occurs that means switch up your question for me, okay? (Laugher) I'm just kidding.

My name is Tom Wittman, Senior Vice President, NASDAQ. Became part of NASDAQ as an acquisition of the Philadelphia Stock Exchange in 2008. And I think I probably have a bit of a unique insights on market structure as I started in 1987 at the Philadelphia Stock Exchange writing software, responsible for the software

development and watched that evolution of trading, especially in the equity markets and in the options market as we added automation. We took a floor based options trading platform and made it completely electronic which we saw the challenges of some institutional order flow, trying to get that executed. Some would say that a trading floor is already alluded to as quasi dark -- dark trading pool itself. I find it interesting some of the major differences between the equity market structure and the options market structure though. Even though they're both SEC regulated entities, they've taken different paths. Some of the points I'd like to discuss today are trade reporting facility and dark trading, intelligent tick sizes, price improvement in equity options compared to the equity markets and payment for order flow.

I think the most obvious difference comes out of the existence of the TRF, the Trade Reporting Facility and what that has done to the equity markets which allows dark pools and off exchange trading to take place non displayed liquidity and then printed on the Trade Reporting Facility. I believe that that's probably -- a TRF is useful when it comes to the dark trading for institutional order flow I think to decrease the impact of that -- those transactions where they can take place, gather liquidity and print it on the TRF is -- makes sense. There are times when I look at this flow that I'm not sure it makes complete sense for small retail order flow as these levels of dark trading have gotten to be 40 percent of the overall market. I think because of this displayed liquidity has been impacted because as market makers do not need to display their markets all the time on lit markets they can provide that liquidity in dark pools to retail order flow. I think retail investors as this happens may not be treated equally. You see price improvement takes place in dark trading at inside the lit market's price. So the more of that that happens it makes me believe that maybe we have unintelligent tick sizes and we need to move more towards intelligent tick sizes where all customers, all retail investors can see displayed markets and execute on those displayed markets. For example if we

have price improvement taking place inside the quoted spread maybe that quoted spread should be something different than a penny, perhaps half a penny or something inside that, a tenth of pennies.

The options market certainly did not have the same concept. We do have price improvement, options of trade in pennies -- quote in pennies and trade in pennies and that represents over 85 percent of the volume that's traded, so it is unique. The other thing that's unique about the options price improvement mechanisms is that when these trades take place on exchange they are subject to all liquidity providers and anyone can see that order flow and respond to that order flow and price improve that flow which does not exist in dark pools. Dark pools have their own segmentation of the flow that comes in as well as who can respond to the flow. That's why you don't see executions taking place at somewhere in between a penny spread on options with pennies.

Payment for order flow is another area, you know, is a -- as I worked through my career at the Philly Stock Exchange and watched these regional specialists attract order flow and try to compete with New York, and I think of the earlier panelists talked about this a bit, we developed a competing specialist system. Those specialist firms began to pay more and more for order flow as they attracted order flow, yet they weren't able to -- you know, we talked a lot about Reg NMS and the issues with Reg NMS but one of the things that a protected quote brought to those people who wanted to provide liquidity to order flow was that NYC could not trade through those better displayed markets at that time. So I think in that regard Reg NMS has been a positive thing with protected quotes.

In closing I'd just like to leave you with a few more thoughts. The markets for equity and options are much more efficient than they were 10 years ago and I think, you know, some of the other panelists have talked about that a bit. I think largely

these improvements have been made through technology and new functionality being brought to the exchanges. At my heart I'm a technologist and I believe that where we're going to see additional improvements are going to be through technology. It's not -- you know people talk about complexity. Yeah, some of these things are complex but we're going to be able to implement more technology to deal with these complexities and make these systems better. I think one of the most important things for us to bring to the markets are enhanced liquidity and transparency of that liquidity so we can build a more robust ecosystem for the investing public. And I think that with the dark pools today I think we're moving away from that displayed liquidity and I think we need to bring that back and come up with ways to get that displayed liquidity back to the investing public.

So I look forward to any questions you might have and thanks for having me here today.

MR. NAZARALI: Just going to get rid of this, it's distracting. Turn it the other way. Good morning, everyone. I'd like to begin today by thanking the Brookings Institution for giving me the opportunity to speak. My name is Jamil Nazarali and I'm Head of Citadel Execution Services, part of Citadel Securities. Citadel Securities is one of the largest market makers in the world. On an average day we handle 25 percent of all equity -- all retail equity market making, 20 percent of all options market making, and 13 to 14 percent of total consolidated volume in the U.S. That's a really remarkable number if you think about it. So whether you're an individual investor, a hedge fund, a mutual fund, a corporation doing a buy back, if you're trading a stock today there's a one in seven chance that Citadel is on the other side of the trade. So we're a very integral part of the market and we have a very vested interest in market structure.

Citadel Securities was one of the pioneers of computerized trading and we helped drive the automation of the markets that have markedly improved conditions for all investors. We firmly believe despite the article to the contrary in the Wall Street

Journal earlier in the week that Reg NMS had a profound impact on the equities markets, unleashing a wave of competition, innovation and automation that drastically reduced trading costs and improved market transparency and liquidity. Before widespread computerized trading markets were notoriously opaque and errors and control breakdowns were the norm. In that environment intermediaries captured profits that were multiples of what they are today. Participants in manual markets including Citadel would routinely encounter work flow issues, trade breaks and delays in receiving fills and trade confirmations. Although some choose to reminisce fondly about the past the reality is -- the reality is much different. The cost of such issues were enormous and all investors paid the price. That's not to say that today's markets are perfect or without issues. Although there have been some high profile problems they've been few and far between and the markets have learned from them and introduced reforms to continue to improve. For example, after the flash crash of May 2010 the SEC introduced several reforms that made the likelihood of that recurrence much less likely. They reformed clearly erroneous trade break rules. They introduced single sock circuit breakers which evolved into the limit up/limit down. They required market makers to post real two sided quotes, no longer enabling them to post stub quotes. And there as a renewed access on market access controls and the creation of the consolidated data depository. As technological innovation continues to drive growth and efficiency in our markets we must not only embrace this transformation but also continue to modernize our regulatory framework to address the new challenges presented by automation. The U.S. capital markets are the envy of the world and it's vital that as we embark on this improvement that we not endanger some of the gains that have been made over the last 10 years.

. As we think about regulatory reform I'd like to touch on three areas. The first is off exchange trading. As many of you now off exchange trading accounts for an estimated 40 percent of all trading in the U.S. There have been many factors

contributing to this growth and new competitions to exchanges has driven innovation, reduced costs and increased liquidity. However as this volume of off exchange trading grows we have two concerns. The first is the possible impairment of the price discovery process. Displayed quotes are the lifeblood of equity capital markets and the benchmark for all of our trading. As more and more trading moves off exchange we worry about whether the price discovery process will be impaired and if this harms the health of the overall market. Well, we don't know if 40 percent is a magic number. This is an important policy issue and something that we think the SEC should spend a lot of time thinking about.

The second issue with off exchange trading is with almost half of all volume occurring off exchange it's imperative for all traders to access pools of liquidity to achieve their best tax requirements. So I need to be able to trade on both off exchange and on exchange venues to get the lowest trading costs. However a significant portion of off exchange liquidity, dark pools, are controlled by broker/ dealers who have varying rules on who they let in and into their dark pools. They can block you for competitive reasons, because of your trading acumen or for no stated reason at all. And we think that that's one issue that really needs to be addressed. As more and more trading moves off exchange it's absolutely imperative that all investors be allowed to access these important pools of liquidity.

The second issue I'd like to talk about is kill switches. As markets have become more automated they've also become more reliant on technology. In addition to that the pace of innovation has accelerated. And finally markets have been much more interdependent so problem with one market participating can quickly spread to others. So when you take these three factors together, despite the fact that today's markets are much better than they've ever been before we have a new set of challenges in making sure they remain robust and resilient. We believe that it's important to both focus on

minimizing the probability of failure but also ensuring that when there is a failure that there's mechanisms in place to minimize the damage. This is the reason we're such strong advocates of kill switches at exchanges. If I have a brokerage account with $100,000 in it and I try to do a million dollar trade that is going to get kicked back to me because I don't have the capital to do that. However if I'm a broker/dealer with a million dollars of regulatory capital and I go to buy or sell a billion dollars of stock at the exchanges there are no mechanisms in place to prevent me from doing that. In August of the year before last when Knight had its trading error the New York Stock Exchange detected it right away and they called Knight to tell them about it. But there's no mechanisms in place for them to shut off trading. I think that it's a travesty that today more than one year later there are still no mechanisms at the exchanges to detect and shut off any trading error like that. That trading error could happen again tomorrow and this time it might happen to a firm that doesn't have the strong franchise that Knight did and there may not be a big capital infusion to save the firm which will mean the rest of the industry will have to pick up that tab and make good on those trades.

I'd like to end with the following thought. The SEC should be commended for taking a very data driven approach to rule making and we implore them to continue to be thoughtful in their approach to making any changes that would -- that may introduce frictions into the market and imperil the gains of the last 10 years. Some of the research on the new SEC data portal is a great example of this data driven approach. As Gregg talked about their have been a lot of rhetoric in the press about order cancellation ratios but the SEC took a look at it and found that the vast majority of orders were in force long enough for market participants to access. So that's a great example of this data driven approach and something that we applaud. This -- the -- there are a number of other issues that we think would introduce frictions into the market place and impede the efficient market -- the efficient functioning of the markets. Restrictions on

order placement which we already talked about, further restrictions on short selling, increasing obligations for mark makers, and any changes to sub penny pricing without looking at the broader issues of make-or-take, etcetera. The list goes on but the point is that the U.S. capital markets have -- are the envy of the world and they're functioning better than they ever have. We also think that as we embark on regulatory reform it's absolutely imperative that we think about the entire system and not address issues on a one off basis. These issues tend to be very, very interrelated and dealing with them on a one off basis will likely lead to unintended consequences. Thank you.

MR. ELLIOTT: Okay. Thank you all and thank you all for being very concise as well. We're -- we've made up the time that we lost at the beginning due to the subway delays. So thank you for that. What I'd like to do is just ask a couple of questions and then we'll take it out to the audience.

Looking from a distance there's a suspicion that we may be talking about a zero sum game here. That basically each of you representing different parts of the industry are fighting over a fixed pool of revenue and profits and that your suggestions -- any suggestions would help you would hurt the others. At the same time I do think there probably are some common views here. I wondered if each of you to the extent you want would like to suggest something that you think all of you could agree on as a step forward. Anyone?

MR. NAZARALI: Well, let me start with the issue of kill switches that I mentioned earlier. I -- we at Citadel recognize that this is really hard to do because as companies -- as broker/dealers trade on exchanges not all of their trades are on that particular exchange and that there is off setting risk trades. But I think all of us could agree that if there was an abhorrent level of trading activity that would imperil the system that should be detected right away and shut off. I think -- I think we could all agree to that.

MR. ELLIOTT: Okay.

MR. BURSTEIN: Yeah, I would just -- we probably -- I would agree with the fact that, you know, limiting -- having the ability at some level to limit order flow into the market place because of potential erroneous behavior is essential. I think the question's going to be always where does that responsibility lie and how is it tracked. One of the challenges of it potentially being at the exchange level is the fact that it is a fragmented market place so orders do go to multiple locations and don't all go to the various exchanges. And so the challenge there would be what kind of limits do you put in that could have an effect that Jamil suggests. We also, you know, question whether they should be automated or not because clearly there are different business models and kill switches should certainly address this specific business model that the firm has. If the order flow is in other words self generated through proprietary means or proprietary ends there's probably, you know, one kind of kill switch needed. If there -- if it is an order driven enterprise, an agency only platform probably a different methodology would be used. But I think we would agree that having the ability to understand and quickly turn off any erroneous trading is essential.

MR. ELLIOTT: Brian, before I let you go is there anything else you'd like to nominate that you'd probably all agree on?

MR. CONROY: We agree that the hours of 9:30 to 4:00 are good hours for the market. (Laughter)

MR. ELLIOTT: All right.

MR. CONROY: Yeah, I guess two points. You know I think as opposed to some of my fellow panelists, again we're a little more agnostic and neutral in the debate on where shares should be traded, etcetera, etcetera. I mean we trade on exchanges, we trade in dark pools, we use all the tools available at our fingertips. If someone wants to build a better mousetrap tomorrow that creates more efficiency for

investors to trade that's where we'll probably go and that's what people are trying to do. As far as, you know, what we can all agree upon, you know, you've heard a little bit about it already. I remember a meeting we had at ICI a couple of years ago when high frequency trading was just hitting and getting -- it was really the hot issue and we had a couple of market participants around the table, sell side, buy side. We sat for two hours talking about potential proposals. At the end of the day someone said, okay, let's all agree that there should be no manipulation in the marketplace. And it was like okay, yeah, that's a great concept but can we dig a little deeper. And that -- but that's all we could agree upon. I think, you know, yes we don't want risky markets, we don't want market disruptions but as you hear once you start getting into the details you start having other issues come up. So it's a difficult topic.

MR. ELLIOTT: Tom, any suggestions?

MR. WITTMAN: Maybe not everyone is going to agree how to do this but I think, you know, the transparency of displayed liquid markets are good for the U.S. markets, they're good for our issuers, you know, companies that we list. How we get there may not be, you know, we may not be on the same page for all that but I think we can agree on that piece.

On the kill switches, as an exchange running three equity exchanges, three option exchanges there are a lot of challenges in this. And you start with options, the first thing you think about protecting really are the market makers that continuously have a lot more risk to the investing public than probably most people in this room realize, much different than the equity markets. So, you know, we have abilities to protect them because of this -- how we have segments. You can segment retail flow, market maker business, market maker liquidity provision. So it's that piece of it. Then you also have participants removing liquidity at very fast rates which is more market maker oriented protecting that. And I think we've got our exchanges in a good place for

that. And where we have challenges are -- when I look at the equity markets -- is whether or not you shut off a firm and know that it's retail business and maybe we've got to switch from, you know, the New York Stock Exchange or some other venue and that flow switches into the NASDAQ where that retail business is just from a switch or how that is arrived. So it's different between equity and options and how to protect our customers.

MR. ELLIOTT: Okay. Can I ask a question, maybe of my panelist, can we agree that the economics in the markets today should be looked at? Or are there issues that need to be addressed?

SPEAKER: What do you mean by economics?

MR. ELLIOTT: Well, again, liquidity rebates, make-or-take, access fees, internalization. Just how orders and why they're being routed and executed in the way they are. Have we gotten to a point where that needs to be examined?

MR. NAZARALI: I mean I think everything needs to be examined. As Brian pointed out earlier I think that it's a misnomer that some of these liquidity rebates are paying for the flow, that broker/dealers are -- that that's their primary decision driver. I see working with all of our regional broker/dealers that they're primary focus tends to be execution quality and they have very rigorous mechanisms. Fidelity being a great example on making sure that all their clients are receiving the best prices and that I think that that is by far the biggest determinate of the routing decision. And if you look at the amount of price improvement the retail clients get it adds up to hundreds of millions of dollars a day. The average retail client has in effect over quoted which measures the price that they receive relative to the price at the time of order submission. Much better than the market. It's come down 30 percent over the last six years and that -- and we at Citadel did an analysis of it and we found that to equate to several hundred millions of dollars a year in additional better prices for clients. That completely dwarfs the total

wallet of payment of forward of flow.

MR. CONROY: You know, I think the issue is not in how the game is played necessarily but how the game is scored. And as I referenced in my opening remarks we'd be in favor of more transparency for the retail investor as to what the net execution cost of their trade is. And it's something that, you know, we've -- we've, um, we've taken steps at Fidelity by posting the statistics I mentioned earlier so that investors can see that and so investors can understand what the net result of our strategies are. You know potentially then after we get more transparency in the process we could look at changing the game itself. But let's start with better understanding the score of the game and then backing into potentially how the game is played. And I would suggest that, you know, eventually if we have better scoring then we would -- market forces themselves could drive the outcomes that you suggest.

MR. ELLIOTT: Just have a follow up maybe for both you guys on this because I talked about this a little bit in my opening remarks, you talk about price improvement, I understand that. It's a big -- sounds like a big number. But it makes me wonder whether or not we're actually quoting a lot of those issues and the right values that would give customers an execution price that would be better than that of price improvement that they got on the execution. So I know there's other factors there but what's -- should I not think that way? Am I off? Am I down the wrong path with that?

MR. CONROY: Well, I think it's a little -- going back to the comment that most of us if we forget everything else today will remember, that is the nudist colony analogy and that, you know, there is a balance between lit and dark that creates this mechanism that allows for such a robust price improvement to occur. And it's not just for the retail investor who is, you know, putting in 100 shares or 1000 shares, whatever it is. Clearly as Ari already pointed out on the institutional side that there are the T. Rowes the Fidelities and the others of the world who are trading on behalf of individuals that are

investing in their mutual funds. And they too are, you know, sending these type of algorithmic orders into the market place in both lit and dark. So, you know, I think we have to be very careful to say that, you know, if we had less dark and more lit that would improve because certainly we don't believe that to be the case at Fidelity. We think the competition between venues and amongst styles of venues has actually driven the market to where it is today which is a healthy outcome for all investors.

MR. NAZARALI: I think a lot of people look at internalization -- this is the practice of retail broker/dealers sending their orders to a mark maker rather than directly to an exchange in a nefarious light. But I think the reality is that as a market maker if I am making prices -- if it's a retail investor that flow is relatively uninformed and so I can give it a better price than an institutional investor who will likely have a much bigger order behind it. So by allowing this practice you're allowing retail investors to get better prices than they otherwise would. If you forced everything on a lit venue where everyone would get the same price you would have a huge transfer of wealth from retail investors to institutional investors because you're average spread would be the weighted average of both the retail and institutional which would mean institutional clients would get slightly better prices and retail clients would get worse prices. So as a policy issue do we want a huge transfer of wealth between institutional and retail? I would say probably not.

MR. CONROY: But again we can spend another hour and a half on this and we won't but, you know, as Tom mentioned there's a lot of big numbers being bandied about. I think, you know, when it comes to internalization from an institutional asset manager view you have to look at what price improvement a retail investor is getting. Is hundredths of a penny really price improvement, is it significant price improvement? Should there be requirements for more price improvement for that retail investor if that flow isn't making it into the public markets where potentially other investors such as institutional investors can play with that, react to that, interact with that, so.

MR. ELLIOTT: I think -- why don't we cut that here. (Laughter) I think you've actually collectively done a great job of answering my question of whether there's agreement up here. (Laughter) I won't say what my own conclusion was in that regard but you can probably guess. So what I'd like to do at this point is give the audience a chance to ask questions. And so again ground rules are please wait for a microphone, identify yourself and your affiliation. Please make sure it's a question and preferably just one. And now I'm going to make one exception for that. Professor Weaver as a member of a previous panel had asked if he could start with a comment rather than a question. So, please let me give him that chance.

MR. WEAVER: Thank you. I wanted to address what you mentioned about the IPO process and lowering commissions as a way to improve capital formation. For a long time there's been another system out there, Bill Hambrecht's OpenIPO -- I think they're still in business, aren't they? And instead of book building they have an auction service. They have an auction and the commissions there are only two or three percent, so it's less than half of what it is with traditional investment banker yet he has trouble getting anybody to come there. And, you know, I thought about this for a long time and I think that people -- the CEOs view going public as a once in a lifetime event similar to people view getting married as one in a lifetime event which is why they spent all that money on their first wedding. And if you're like me not much on the second. (Laughter) But, you know, so I think we have to change perspective of CEOs going public if we're going to do anything about them adopting different models.

MR. CONROY: Absolutely.

MR. NAZARALI: Actually if I could start. I was an M & A investment banker for years so -- and worked on IPOs so I'm interested in that too. I absolutely agree with your premise, that is CEOs and their key officers think paying a few extra points to make sure this goes smoothly and that nobody embarrasses them afterwards is

worth it. Now I think we could have a whole big long discussion and I'll let Brian and others respond, but we could have a whole big long discussion as to whether that's just paying for comfort or whether you're actually getting value. I tend to think actually there's more value than you might think there but I don't know where the cut off is. But certainly behaviorally you're right. That is how they think. Same reason that they pick a Goldman Sachs or whomever in terms of that. Because there are also smaller firms who do a good job who don't charge as much. But it's the same thought process. So I'm sorry, Brian.

MR. CONROY: Yeah. So it's what we believe is a more automated process would drive lower costs and not the other way around. So if I wasn't clear in my opening statement I'll start with that. I'll also draw two analogies which I think explain the state potentially where Bill Hambrecht and others' automated IPOs have been in the market place and where they might go in the future. As a younger trader I oversaw the stock exchange operations for one of the large investment banks and as we began to automate the process of trading on the floor for our firm we received tremendous pushback, especially from the specialist community who insisted that we needed them in a manual way to help set prices on the floor of the exchange. I was convinced in 1997 that wasn't the case and I think history shows which way it worked out.

The other example I will bring up is a little company called Microsoft, a few years ago brought to the market an item called the tablet computer. And the tablet computer is essentially the iPad of today. I'd say 90 percent of the iPad which much of the functionality that the iPad has. It was a little heavier, a little clunkier. It was the same. Had, you know, a wireless access, it had internet, you know, Wi-Fi access. The differences that many people argue is that the world hadn't caught up with the concept yet. We hadn't become addicted to the devices that we did years later and then wanted the larger screen. And so while it was a great idea it was introduced potentially at the

wrong time. And over time as the world changed and caught up with the idea of the tablet computer we had the proliferation of iPods and iPad and other devices that we have today. So one could make -- draw those -- look at those two analogies, one in our business, one in the kind of e-commerce industry, the information age, and certainly then draw the conclusion that it's not a big leap of faith to say that potentially because of all of these advancements in our market place in the new world that the IPO process stands out as being a different to, you know, the market -- the formation of capital in other ways. So just two -- you know a few thoughts and that's something we believe in. And while we're not -- and we don't aspire to be an investment bank, you know, what we aspire to do is make sure that, you know, opportunities for individual investors either through our mutual funds or retail investors have access to great ideas and certainly we think it's in the best interests of the markets to make the capital formation process as efficient as possible.

MR. ELLIOTT: Okay. Other questions? That's back there.

MR. TRICCHINELLI: Hi, Rob Tricchinelli with Bloomberg BNA again. No surprise here, I just want to ask you the same question I asked the first panel about the tick sizes bill. And actually I guess if, you know, there seems to be some consensus here maybe the bill isn't the right way to go then how did it get out committee unanimously.

MR. WITTMAN: Well, as Gregg said on the previous panel there's a lot of work being done on this. From my viewpoint it's taking a look at how to set up a pilot that makes sense when we can measure the benefits of that. So, you know, we're working through that and I think we're making some progress. I think it can be beneficial yet still trying to figure out exactly how we're going to measure the success of it.

MR. BURSTEIN: Yeah. And I wouldn't necessarily comment on the bill alone but just in general as I think I mentioned, you know I probably went through it in my

presentation, but there's probably four initiatives going on now relating to tick sizes. The Duffy Bill, again the SEC Investor Advisory Committee, there's a Citi proposal out there as well as this report that was provided to Department of Treasury, you know, all around a pilot. I think -- two points I guess I'll make. One there's a lot of focus around widening tick sizes, it's going to spur more IPOs, it going to, you know, push folks on this panel to do more research into small companies and that's the goal and that's what we should be focusing on. I think from our discussions that's not necessarily what people think is going to necessarily happen. So maybe we need to take a new look at the focus of why we're going to be doing a tick size pilot. It's probably around liquidity. As Gregg Berman mentioned earlier, you know, it's probably going to show hopefully some interesting things around liquidity and how people trade but that's probably the purpose. As Tom just said I think our focus is on whatever pilot gets done that the parameters are correct, that we are focusing on the right number of stocks, the types of stocks, what tick sizes it should be, the durations, things like that. So that's where our focus is.

MR. NAZARALI: A couple of comments. One is I think we would strongly prefer if rule making on market restructure was the purview of the SEC and not done through a political legislative process. Our concern with the tick -- the widening tick sizes is we think that there's going to be a lot of unintended consequences. For example widening tick sizes is likely going to drive much more liquidity into dark pools because people are going to want to trade at that smaller tick size. You are creating an artificial impediment for them to do that and so they are going to do that by trading in dark pools where they can trade at a finer increment.

MR. ELLIOTT: Okay. A question back there, about the middle.

MR. STONE: So going along with what Gregg said, hypothesis --

MR. ELLIOTT: Yeah -- I'm sorry, could you identify yourself?

MR. STONE: Sure, I'm Gary Stone with Bloomberg Trade Book. So the

question I have is that order routing practices and conflicts only matter to the extent that people are hurt. How do you measure it?

MR. ELLIOTT: Anyone?

MR. CONROY: I think we suggested a few ways and support already in the items that we're doing at Fidelity and we would support a more collaborative effort by the industry and potentially the regulators to -- with respect to retail have a better display mechanism so that the retail investor understands what the net cost of his execution is, you know, versus what is available easily in the marketplace today. So with respect to the retail investor that's an initiative that we would support.

MR. ELLIOTT: Ari?

MR. BURSTEIN: Yeah. I guess, you know, if you're looking at, Gary, how you measure it again that's -- that gets to should we do a pilot around, you know, rebates, access fees, things like that. That's easy to say, difficult to implement and -- you were going to have a comment?

MR. STONE: I was just going to say that, you know, the assumption is that rebates are causing a problem. I mean the presumption is that rebates are causing a problem and causing people to route orders in different ways. Okay, we'll take that as true. But to the extent that people are hurt is really what matters. It's like Brian said, it's the rules of the game, you have to measure it in order to be able to figure it out. So I guess what I'm asking is that, you know, so, Brian, you're saying it's the price you would have gotten versus the price you got but are there other things also that we should be looking at in addition.

MR. CONROY: Well, you know, if I could just respond, I think you've got to start somewhere. I think, you know, and to the extent that maybe it's an end all solution that I'm suggesting, at least the way we handle it now at Fidelity it's an on average. That is certainly a good place to start. It is a very technical as you know

situation. But potentially if you start on, you know, putting transparency in different parts of the chain you'll learn quite a bit along the way and then to your point decide whether it's hurting or not hurting. And I think it also goes back to, you know, the economics of the routing is only part of the decision. Part of it has to do with the risk piece, part of it has to do with the stability piece and quite frankly the customer service piece when there is a problem can you extricate your orders from that market place quickly and move them to another. So those all factor into our decisions. But at the end of the day if the end result for the investor is a positive experience with that brokerage company then that should be a determining factor for the decision on who to trade with.

MR. ELLIOTT: Okay. Other questions: Yeah, way in the back there.

MR. MICHAELS: Dave Michaels with Bloomberg News. Question for Ari on the ICI meetings that you talked about, is the goal of those to bring proposals to regulators? For instance the FINRA ATS transparency rule proposal and are there more of those that we'll see soon and are you also discussing the SRO status of exchanges within that?

MR. BURSTEIN: Yeah, again I can't comment on specific meetings that we've been having but, you know, we talk to other market participants, everybody on this panel and folks in the room all the time on trying to get some consensus around what to do on some of these topics, whether it be the economic incentives, decimalization, tick sizes and things like that. You know we're certainly going to continue that this year as well.

MR. ELLIOTT: Okay. Other questions? Any last comments any of the panelists would like to make?

MR. NAZARALI: I have one more thing I think we can agree upon that it's going to be cold -- the coldest Super Bowl in history this Sunday, so. (Laughter)

MR. ELLIOTT: I think maybe we got a few too many football people this

time, but (Laughter) anyway that adds a little diversification. Thank you all very much. I certainly thank the panelists. I appreciate your help here. (Applause)

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I, Carleton J. Anderson, III do hereby certify that the forgoing electronic file when originally transmitted was reduced to text at my direction; that said transcript is a true record of the proceedings therein referenced; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were taken; and, furthermore, that I am neither a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

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