

00:00 Rule overview

Adrian Griffiths:

Hello, I'm Adrian Griffiths, head of market structure at MEMX. In this edition of the X Sessions, we are talking to some of the markets leading institutional investors and brokers about the SEC's recent market structure rule proposals. I'm joined by:

- Philip Pearson, Head of Electronic Product for the Americas, Barclays
- Bojan Petrovich, Global Head of Equity Trading, J.P. Morgan Asset Management
- Rich Steiner, Head of Global Market Structure, RBC Capital Markets

While the SEC has proposed reforms in a wide array of areas, we're going to focus today on three very important interrelated issues, tick sizes, round lots, and access fees, and how they could impact liquidity, price discovery, and trading for the buy side. Before we get into the Q&A, here's a quick reminder about what the SEC has proposed.

Tick Size and Access Fee Cap Changes

- **Multiple tick size buckets** based on **Time Weighted Average Quoted Spread** during the last month of the prior quarter (“Evaluation Period”).
- Minimum pricing increments **apply to both quotes and trades.**
- **Access fees changes for all NMS stocks**, including those with no change to tick sizes, with exchange fees and rebates “determinable at the time of execution.”

PROPOSAL			
Minimum Pricing Increment	Stock Price	If the Time Weighted Average Quoted Spread for the NMS stock during the Evaluation Period was:	Access Fee
\$0.01	≥ \$1	Greater than \$0.04	\$0.0010
\$0.005	≥ \$1	Greater than \$0.016 but less than or equal to \$0.04	\$0.0010
\$0.002	≥ \$1	Greater than \$0.008 but less than or equal to \$0.016	\$0.0010
\$0.001	≥ \$1	Equal to or less than \$0.008	\$0.0005
\$0.0001	< \$1	N/A	0.05%

*Changed pricing increments and access fees are highlighted in yellow

As it relates to tick sizes, the SEC has proposed multiple tick size buckets based on time weighted average quoted spread during the last month of the prior quarter. These increments

range from 1 cent per stocks with spreads greater than 4 cents, all the way down to a tiny 10th of a penny for stocks with spreads equal to or less than eight tenths of a penny. This increment would also be harmonized, meaning that it applies to trading in addition to quoting. With respect to access fees, the SEC has proposed a 10 mill access fee, down from the current 30 mills with a lower 5 mill access fee for stocks in the most granular tick size bucket. Any fees would also have to be determinable at the time of execution.

Round Lot and Odd Lot Acceleration

- **Accelerate round lot reforms** adopted in 2020 market data infrastructure rule (“MDIR”) on the exclusive securities information processors (“SIPs”) as recommended by MEMX.

Stock Price	Average Closing Price for Prior Calendar Month
100 shares	\$250 or less per share
40 shares	\$250.01 to \$1,000 per share
10 shares	\$1,000.01 to \$10,000 per share
1 share	\$10,000.01 or more per share

- **Odd-lot quotation information**, as defined in MDIR (i.e., multiple price levels), would be made available on the exclusive SIPs prior to the implementation of competing consolidators.
- In addition, the definition of odd-lot quotation information would be modified to include the **best odd lot order**, i.e., a NBBO equivalent for the best priced odd lots.

Finally, the SEC has proposed to accelerate both odd lot and ground lot reforms, with odd lot reforms also including a new concept of the best odd lot order or BOLO, which is essentially an NBBO equivalent for the best odd lot.

02:03 What’s the overall impact of the SEC’s proposed changes to tick sizes, round lots, and access fees for retail and institutional investors?

So Bojan, why don't we start with you? The SEC seems really fixated on managing the way that retail order flow is handled, but I think we all appreciate that these changes may also have a very significant impact on institutional trading as well. I would say we all agree that the SEC should think about how market structure impacts retail investors, but institutions also manage a significant amount of money that the American public has invested in the stock market. So as

our buy side representative, why don't you share some thoughts about how this impacts institutional investors and your customers?

Bojan Petrovich:

Yeah, I would say there's a number of different things going on that certainly takes into account the institutional investor. If you start talking about tick sizes, there's been a lot of work done there that certain stocks are tick constrained. Alleviating some of those headwinds, I think is a good step forward.

If you talk about some of the odd lot reform, there's benefits there in terms of how we think about bid-ask spreads for stocks that are higher priced, and then what does that mean for some of the dark liquidity then that trades at the midpoint? So there could be some gains improvement there. And then we will talk about it later, probably here today, is some of the access fees. So that's sort of an indirect benefit that certainly allows our intermediaries to not only be able to support as well as maintain their platform, but also come back to us with great ideas and the combination of a lot of that should produce better outcomes. So I would highlight those three instances as where I think that there was some thought and consideration when it comes to the buy side perspective.

Adrian Griffiths:

Got it. Thank you. Thank you for that. And you seem to have touched on most of the topics that we're going to talk about today, so maybe we can get into the meat.

04:00 Should the SEC take a more moderate approach to tick size changes?

So starting with tick size changes, you mentioned there's been a lot of industry debate around tick constrained securities, MEMX has published two white papers on this topic. I think it's an area where we all agree that some change would be helpful, but there is definitely I think disagreement in the industry about what exactly is beneficial in this area. So you look at the SEC's proposal, it goes far beyond addressing tick constraints. By our count, we're looking at perhaps just under 4,000 securities that would be impacted by narrower tick increments. Those represent almost 70% of volume and 60% of notional traded.

So Rich, I want to jump to you here. The SEC is really focused, I think, on spreads as the metric that they use to measure market quality. But for institutions, including many of your customers, I think liquidity is equally or even perhaps more important. So as an institutional broker, do you have concerns about the specifics of the tick size regime the SEC has proposed?

Rich Steiner:

So thanks Adrian, and I'll start off by thanking you for having us here. Appreciate the

opportunity to share thoughts on this. I would also say that at a high level, we're encouraged that the SEC is taking a look at market structure more broadly, if you will, and hopefully looking for ways to increase transparency and efficiency and reduce conflicts. So in and of itself, philosophically we would agree with that, but as you just alluded to, all these rules really, are very broad and they're complex and they're highly prescriptive, which is where the challenges come in as we try to potentially over-fit an outcome. Wall Street's a pretty creative place, these people try to tend to find ways around that to go where the market ultimately wants to go and for liquidity to find a good home. So getting into the specifics here, we do have concerns that I think a number of folks in the industry have been talking about it of late around the breadth. We can start with that. Insofar as I think a lot of folks can agree, and I believe your firm agrees, you've put out a couple papers on it, regarding the universe that we should be talking about as it relates to minimum price increment or addressing it. And certainly even from a modesty approach, just keeping a more constrained universe to see how it goes, see if it needs expansion, see if it's optimal, whatever the case may be. So long-winded way of saying tick-constrained stocks, going into stocks that generally have a penny widespread, one could argue that's artificially wide, maybe going to a half a penny a nose. While not novel, and a lot of people have been talking about it for a while at this point, it certainly seems that the industry is coalescing around that.

So you get a couple things about it, small universe and a more modest tick regime, which I think would be a good place. We can talk about the fact of what happens when you start breaking ticks down, right? You obviously would see less liquidity at each price point. In and of itself, not so great for institutions. To your point, liquidity is helpful and now you have to go through probably multiple levels, have potentially issues around cross and lock markets, flickering quotes as you get into 10 mil regimes and things of that nature. You wouldn't generally, the way it exists now at a penny, even in an aggressive order, you might take it up a penny, wait. Go to midpoint at a half a penny, do some other things, then take it up the next level and in somewhat of a sequential way. When you break things down into very, very narrow ticks, you more than likely will go through multiple levels at once.

And so there are some problems we can see with that. On the plus side, it would appear that institutions might have greater access, if you will, to retail orders by having smaller ticks such that more order flow finds its way onto an exchange or an ATS. So we think that that's a benefit. But nonetheless, getting back to the breadth, having too many tick sizes in a spread, studies have shown, isn't so great. And when you have stocks that have a 3 cent wide spread, for instance, and now they're going to go to a half a penny, they're not tick constrained. So why were we seeing a tick even more and having six takes, if you will, instead of three. So I'll leave it at that. But while again at a high level we think there's some positives here, we think a more modest approach would be best.

Adrian Griffiths:

That makes a lot of sense. And I think that lines up very much with our recommendations that we've already provided to the SEC.

Philip, I want to bring you in as well. Obviously you're an institutional broker. You also operate a large equities ATS. Any different perspective on these changes from you?

Philip Pearson:

Thanks, Adrian. The last thing I want to do is just agree with what everyone else is saying, but unfortunately on this issue I do think that we agree. I think that our opinion as well is that the current proposal's a bit over-engineered in terms of the tick increments. I think that we, as well as the rest of the industry, does seem to be coalescing around the one half penny tier. And I do want to say, to your original point of the up to 4,000 stocks would be affected, I mean, when we looked at, depending on which study you're looking at you're seeing that anywhere between, let's call it 65 and a hundred symbols are actually affected by being legitimately tick constrained, so we're now talking about up to 3900 symbols that really don't have this problem that we'd be adding a problem for.

So I think on those symbols that are legitimately tick-constrained, I do think that there's an issue. I think that we all see that with Sirius for many years and Forward, et cetera. And I think that adding the half penny increment, I think that would be a step in the right direction. I also think that if that doesn't end up working, we can add from there. There's no reason that it has to be a one shot approach. I'd also add that the only thing that I want to add that's something not being talked about quite as much is that the trade increments, and I know for us at least I think that I don't see a reason that the trade increments, in our opinion, do not need to be the same as the tech increments. So I think that trading should be allowed at any point in the spread, same as it is now, but I think that it's not just for STPs.

I think that you see on a lot of ATSs, including Barclays ATS, is that you see a lot of quarter spreads. So for example, if there's a midpoint order sitting and a full spread order comes in, several ATSs will print at three quarters of a spread and give three-quarter price improvement to the midpoint order and a quarter price improvement to the full spread order. And I don't think that's a bad thing so I think that that should still be allowed. The last thing I'll note is that I did see, obviously—and we'll probably talk more about the NYSE, Citadel and Schwab letter—I saw that they proposed I think a 10 mil trade increment. I don't see the need for that, but I'm not necessarily opposed to it. I think that we could make something work if that is the increment that's collected. I just think that overprescribed in terms of on penny or half penny would be a bit much.

Adrian Griffiths:

Yep, that's a good point.

10:47 Would a more moderate tick size approach benefit the buy side as well?

Bojan, I want to bring you in as well. It seems like there's maybe some amount of consensus on what the SEC could do, but from your perspective on the buy side, what do you think about that? How should the SEC address these concerns?

Bojan Petrovich:

Yeah, I mean I think you mentioned a lot of the good points already. The couple of things that I would add, if you look at any pre-trade cost model, one of the components in there is it asks spread. So to the extent that certain stocks that are tick-constrained and trade at a more narrow spread, these models are going to reflect the lower overall implementation costs.

So if you're on the buy side and you're modeling for these things, it should be a pretty good outcome. There's a lot of empirical work already done on this topic. People, I think, have a very good sense of what cohort of stocks this makes sense for. We should, I think, leverage a lot of those things. And to Phil's point, to have one sort of uniform trade as well as quote size, that might be going a little bit too far. We'll kind of see how that all shakes out. But having some flexibility in there to reward people that provide liquidity seems like an intuitive thing to do.

Adrian Griffiths:

Yeah. That's great. I mean, I think really what we're all trying to achieve here is to make sure that we're actually optimizing for the problem that we have. And I think, Rich, to your point earlier on, starting small and working our way from there is a good way to do this, right? Just because you start at something like a half penny doesn't mean that you can't further optimize in the future. We don't necessarily need a situation where you're spending 10, 20 years under one regime before you look at changes. You can always modify as you go and as you collect data.

12:38 Access fee caps: Will they really reduce trading costs?

So moving on to access fee cap, access fees and tick sizes are obviously very much intertwined and the SEC's proposed significant reductions in the access fee cap down to five or 10 mills depending on the symbol and the tick size bucket that symbol is in. So, Bojan, sticking with you, although the buy side doesn't pay exchange fees directly, you kind of hinted at this at the beginning, but institutions are significant takers of liquidity and your brokers are paying those access fees for you. So do you think that lowering the access fee cap reduces your trading

costs? And then are you also concerned at all about trade-offs that might have in terms of potentially widening spread since the access fees are obviously used to contribute to rebate payments?

Bojan Petrovich:

Yeah, look, this is a very good question. Oftentimes it's even kind of difficult to answer. We are going to be sort of an indirect beneficiary of these things. But I would say, all else equal, lowering the access fee is more of a tailwind than it would be a headwind for us. And what is the result of that? Well, that could mean better support stability for the current algorithm offering. It could spawn more development, outreach, execution, consulting, and frees up a certain level of resource that may not have been there had you not lowered the access fee. So there's good things that I think that come out of it from the buy-side institutional perspective. So that would be one thing that we would point to as more of a tailwind, and that's how we're thinking about it.

Adrian Griffiths:

Phillip, what's your perspective? Is this beneficial?

Philip Pearson:

Yeah, Adrian, thanks. I think it is beneficial. I don't feel super strongly about it because I think that our routing decisions for the most part are made in an agnostic way. But of course, I think it would reduce our costs and thus, that would flow back to the buy-side clients and to the individual investors. I think that they're definite, and I think there's some depth positives there. I think one of the ancillary positives from our perspective is that it would help remove, to a certain extent, the narrative that brokers are only routing passively for rebates. I think that is commonly misunderstood. I think that we make our routing decisions, we route passively because we want to earn the spread because we think that that earning spread is a way to reduce trading costs.

We route to venues, not because they pay us bigger rebates, but because they have lower market crowds, or that because of queue depth at the current time or other various quality metrics. So I think that by reducing the access fees in general, that will remove some of that perceived conflict of interest and perceived bias. So for that part of it alone, I'm pretty happy about that.

Adrian Griffiths:

Rich, what do you think about this one? Does this have any impact? Is it positive? How does it impact your routing decisions?

Rich Steiner:

Thanks, Adrian. I do think it's positive. I would agree here that lower fees across the industry should be a net benefit. I also think that it helps reduce either the real conflicts of interest or perceived conflicts of interest regarding not just rebate harvesting, if you will, but fee avoidance. Which is actually for institutional clients more common or more of a concern. They're generally more frequently takers of liquidity than providers of liquidity. And so if you feel that firms are going to their own ETS and then other ETSs before they go all the way out to a 30 mil take fee, this certainly shrinks itself. It doesn't eliminate a conflict, but it does reduce the conflict.

And further to Phil's point, I think that large institutional brokers like us, there's lots of avenues to profit and we don't route in a cost-effective fashion. But I do think for smaller firms, they may not have quite as robust a policy, if you will. And so this does shrink that down as far as doing some things that may be conflicted or turn out to not be beneficial for our client.

I would also say furthermore though before we get to hung up on, "Hey, access fees are coming down and the industry's going to save money." Either that is in lower commissions to the buy-side or to Bojan's point, to invest more into our platforms that can help the buy-side indirectly. I think there's other costs that are going to go up here if this orchestra of proposals goes through, not the least of which is an increase in market data and connectivity fees as we all set up to connect to.

And potential material liquidity venue, immaterial liquidity venue is pretty much anywhere. And so I don't need to go too far down this path, but I do think as we talk about access fees as a way to lower cost, we ought to just keep in mind that some of these things might actually end up net increasing the cost as an industry.

17:27 The proposed round lot and odd lot changes: Are they beneficial?

Adrian Griffiths:

Yeah, no, that's actually a great point and a great segue because our next topic is round lot and odd lot reform. I think you're right, a lot of the changes that we're talking about. And as you mentioned earlier, there's a potential for needing to access liquidity beyond the top of book more frequently. That's obviously going to have an impact in terms of the data that people consume.

So let's flip to round lot and odd lot acceleration. These are both things that the SEC had proposed to do, and actually finalized in the market data infrastructure rule. But we're already many years away from the adoption of that rule. And unfortunately we are still stuck on phase one of implementation, which is fees. Now we've been, at MEMX, very strong supporters of the market data infrastructure rule.

We've also been pushing for some of these changes including round lot acceleration because we do see benefits there, both in terms of market transparency, but also in terms of execution outcomes. We've put out a couple of white papers on the round lot topic, mostly showing that actually reforming the round lot could not just change transparency but also benefit investors in terms of execution quality. We pegged that as much as \$2 billion a year in savings from round lot reform.

So Philip, I want to start with you on this one. Do you think the round lot changes are beneficial? What's your take on the impact of this from an execution quality perspective?

Philip Pearson:

Sure. Thanks Adrian. First I'll say I think round lots are not a bad thing. The round lots being 100, I don't think is necessarily a bad thing. I did read your research, Adrian's research on the topic and I think you make good points about this spread and the potential cost savings.

But I think that the one thing we need to think about is that for us, there is a benefit to the 100 shares. So just giving an example, recently we were looking at our minimum quantities that we're using in our dark aggregation strategies and we're looking at dark pools. And a few dark pools, we were looking at, almost 60% of the trades we're often 100 share increments exactly. And you might say, "Well, who cares? Why does that matter?" I actually think that's a good thing and then I'll explain why.

I think that it helps us as an institutional algorithmic provider blend in with the market. I think that if we send a 100 shares and we move a 100 shares around, because everyone else is trading in a 100 shares, it's harder to detect our strategy. So let's say I had a 1,000 share order and let's say we have a world where we're using a 40 share and a 10 share round lot. I think that you'll see a lot of clustering around other sizes. So if you, let's say a 10 share round lot will have a 10 shares, 20 shares, 50 shares, there'll probably be clusters around those sizes. It won't be anywhere near 60% in terms of amount of shares trading at any given size. I think that if you're moving that, let's just say 20 shares around, it'll be a little bit more obvious to the people watching the tape that there is some kind of algorithm provider that that's doing something like that. For that sake alone, I like the 100 shares.

That being said, I do think that there is a huge cost benefit to reducing the spreads. But as you noted in your second paper, a lot of that was accomplished by splitting the shares of the high price stocks. So obviously people might laugh when I say this, but why don't we just propose share splits as the answer to this. I know obviously you can't just make people split their stocks, but I think that in general if the encouragement of splitting and we saw lower price stocks to begin with, this wouldn't be as much of an issue and it would solve the problem that you're raising at the same time. That being said, I do wonder how much the actual spread savings would be on some of the less liquid names.

Obviously you see Amazon where it's in the same way as you talked about the tick-constraint. It's like you know that the Amazons and the Googles, when they split, obviously the spreads were going to come down because they were going to be super liquid. But I wonder how much that would be true in some of the stocks trading less than a million shares. And so that's to be seen to a certain extent.

But I think that there are pros and cons. I think it's a little bit less clear, but why not stock splits? Let's bring back the split. So Tesla, Amazon, Google, started it, let's keep going there. But otherwise, yeah, I think that round lot on the really big stocks should come down. I never liked the four different 10, 20, 40, 100, but for over a \$1,000, sure, let's do 10. But I don't think that we need quite as many price points as was proposed originally.

21:58 Does adding odd lot quotes to the SIP help the buy side?

Adrian Griffiths:

Yeah, and that's obviously a good point, right? We're always trying to optimize, not just spreads, but liquidity. And I think we can ask the same question here as we ask for tick size reform, which is, are you striking the right balance? And that's a very important point I think. So, Bojan, maybe let's move to odd lot acceleration. Obviously, a lot of brokers are taking in direct feeds for order routing and other purposes. From your perspective on the buy side, does adding odd lot quotes to the SIP help you at all?

Bojan Petrovich:

Not necessarily in the quoting, but the trades are something that obviously we want to keep an eye out for. So, obviously, we do our own transaction cost research. We want to be able to plan our own trade strategy and execution. And without all of the trades, it becomes very difficult to do that. And I think more important is seeing all of that data reflected and not just excluding the odd lot. So, that's where I think, on the buy side, people should be spending a little bit more time and focus, because if you do that in-house, you don't need real time. The delay in, certainly, the overnight SIP feeds are plenty for research, but we need to make sure that all of

the trades are actually reported on there. And that's a key thing, especially if you are five or 10% holder of some of these stocks that we trade in, it's important to see all that information.

23:26 Should we instead focus on just implementing competing consolidators and the rest of the infrastructure rule?

Adrian Griffiths:

And Rich, maybe we can close it up with you. Is this the right direction from the SEC? Or should we just focus on implementing competing consolidators and the rest of the infrastructure rule? What's your take on that?

Rich Steiner:

Thanks, Adrian. Yeah, I mean, the smaller round lots become, again, a question around how relevant is that, again, for institutional clients, right? We now have 40 share round lots. It's more trading, more data again. So, we don't tend to be huge fans of that. I don't think it's terrible, but it's probably not the place I would go. I would go into the cost savings that can probably be had, to your point around competing consolidators, hopefully some innovation and some cost constraints around that, and increasing the core data, the robustness of core data. We've been outspoken supporters of that formally in comment letters and in meetings that we think that there's a huge swath of the industry that can benefit from a more robust SIP than the current effective need to use proprietary exchange market data feeds. For a market maker, for sure, they're going to use proprietary exchange market data feeds, and they're going to need to.

But I think for folks running even highly proficient agency electronic trading platforms, a robust SIP that is not narrow cast, but broad cast, that has depth of book, that has order and balance information regarding the fees, that has odd lock quotes in it, by the way, not even just round lot quotes, so no matter what the round lots are. So, I think that that would be more beneficial to the industry as a whole, as opposed to say focusing on things around smaller round lots, which again, could have a benefit. Shrinking spreads are fine, but what's a benchmark for an institutional client? Is it going to be that 10 share? A 10 by 10 market we can debate, even a hundred share market is an institutional market, but a 10 share market or a 40 share market, and say, \$500 stock, I don't know that that's the case. So, without belaboring the point anymore, I think there are parts of the market data infrastructure rule that might be more beneficial, from a cost savings perspective, from a benefiting a larger swath of the industry perspective.

Adrian Griffiths:

Yeah. And I think that's something that we'd all like to see from the Commission. Really, at this point, we're playing the waiting game to see what their next step is there, but I think there are a lot of benefits that we could get from implementing the rest of the infrastructure rule. And I do hope that is something that the Commission is continuing to work towards.

25:53 What key takeaways should the SEC take from the industry comment letters?

Now, maybe just to wrap things up, we are, I think, exactly three weeks away from the March 31st comment deadline. So, I want to just quickly from each of you, what are some key takeaways that you think the SEC should take from your letter, if you're planning to submit one, or other letters that people are going to be submitting?

Rich Steiner:

Anybody? I mean, I'm happy to go first. I would say the word I would use would be modesty and a review process, right? Before we put in four rules, let's put in a modest one rule and see how it affects multiple participants. Right now, you've got multiple rules that are going to affect participants, whether they're retail, institutional, broker dealers, the list goes on, and including venues themselves and the regulation around that. The fact that no rules are being sunset, you've got a best X rule on top of FINRA 5310. I'm not going to delve into that one right now. But a modest approach, I think, would be best and a less prescriptive approach.

Philip Pearson:

If I could just add on that, I think that when you see such diverse market participants as the groups that have been teaming up on some of these comment letters, I think that you can see that there is industry consensus about a few of these points. And I think that a lot of the comment letters are in the same vein. And because of that, I'm hoping that the commissioners are willing to consider some of the changes that have been proposed. I think, as you said, Adrian, it's certainly the waiting game, and we're going to see if these letters matter at all. But I think that our thoughts would be cost benefit analysis. I mean, that's what we want to see. We want to see cost benefit analysis on any of the major changes, especially the very drastic ones before they go in. I think that that's what I personally think, and I don't want to speak for others, but I personally think has been a little bit lacking in what we've seen so far.

Bojan Petrovich:

And not to belabor the point, but obviously the initial goal is to first do no harm, make sure we get that right. And there are a lot of things that people have already looked at with a lot of empirical data and analysis, and we should leverage those things. There's a lot of, like you say,

viewpoints coalescing on some key themes. So, keeping it very high level non-prescriptive where people have already consensus is probably the right way to go.

Adrian Griffiths:

Yep, absolutely. Absolutely agreed with all of those points here, right? We need to dig into the data and be careful about what we do because this is all incredibly important, and you don't want to be taking a gamble with the equity markets. So, appreciate, anyway, all of your thoughts today. I think it's been a really great discussion, and thank you for joining us.

Philip Pearson:

Thanks, Adrian.

Rich Steiner:

Thank you, Adrian.