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March 31, 2023

Ms. Vanessa Countryman
Secretary
U.S. Securities and Exchange Commission
Washington, D.C. 20549-1090

RE: **Release No. 34-96494; File No. S7-30-22; Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders**

Dear Ms. Countryman:

Themis Trading appreciates the opportunity to comment on the SEC's Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders proposal.

For your background, Themis Trading is an institutional agency brokerage that was founded in 2002. We do not make markets and we do not trade proprietarily. We do not own a dark pool. Our only business is providing best execution for our institutional clients; we are agents for long-term investors. Our clients are comprised of pension funds, mutual funds and hedge funds, and together they represent trillions of dollars of long-term investor funds.

Before commenting on this proposal, we would like to express our overall support for the four SEC Market Structure proposals. We believe that these combined proposals will reduce some of the concentration and segmentation issues associated with broker order routing. We are, however, disappointed that the Commission did not go further and call for an elimination of payment for order flow and stock exchange rebates. We believe that the best way to reduce order routing conflicts, for both retail and institutional brokers, is to eliminate rebates and payment for order flow and replace them with a regulated take/take fee schedule.

Background on Order Routing Conflicts

Most retail brokers do not make money from commissions but rather they collect a significant amount of their revenue from payment for order flow. Rather than route orders to an exchange and pay an access fee, they route over 90% of their marketable orders to market makers and often receive payment for order flow from these market makers.

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Institutional brokers, on the other hand, are subject to the maker/taker pricing model when trading on most exchanges (there are a couple of inverted taker/maker exchanges as well as one take/take exchange). When trading on an exchange, brokers collect a rebate when adding liquidity and pay an access fee when taking liquidity. This rebate/access fee system has created economic order routing conflicts.

After the Meme stock events of 2021, concern grew that retail investors were being taken advantage of by a system that was favoring a few large market participants. SEC Chair Gensler confirmed these concerns in his statement that accompanied the proposing release:

> "A large and growing amount of equity trading now goes into what many call the dark markets, particularly off-exchange market centers such as wholesalers and dark pools. Such off-exchange market centers, though, benefit from transacting using a different set of rules from the ones on national securities exchanges. This may undermine competition," said SEC Chair Gary Gensler.

Is the US equity market as fair and competitive as possible? Are retail marketable orders getting the best possible price even though they were being siphoned off and sold to market makers? Has the price discovery process been weakened since retail marketable orders almost never have a chance to interact with other market participants? We believe that these were just some of the questions that the Commission was thinking about when they drafted the four market structure proposals.

Our Comments

As mentioned previously, Themis Trading is an agency-only, institutional broker that trades on behalf of institutional clients. With that in mind, we believe that the amendments to Reg NMS known as "Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders" will impact the way that our clients interact with the market. We are generally supportive of this proposal but we are very concerned with the proposed reduction in the minimum pricing increment.

This comment letter includes:

- Concerns about the minimum pricing increments
- Reasons why we support the reduction in access fees

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- Two recommendations for the SEC to consider that will increase transparency while reducing information leakage

Minimum Pricing Increments

Our primary concern is with the reduction in the minimum pricing increment from $0.01 to as low as $0.001. We believe that this reduction will likely result in **displayed quote fragmentation and volatility, sub-penny quote-jumping, flickering quotes and increased message traffic**. While some stocks may warrant consideration of a smaller tick size, we think reducing the tick size to $0.001 or $0.002 will harm market quality.

Why did the SEC propose $0.001 and $0.002 tick sizes? According to the proposal:

> "One reason why the Commission chose the particular tick size cutoffs in this proposal was to have sufficient ticks intra-spread to preserve meaningful price improvement."
>
> "The Commission is proposing to apply the amended rule 612 minimum pricing increments to the quoting and trading of NMS stocks in order to promote fair competition and equal regulation between trading in the OTC market and trading on exchanges and ATSs, particularly as it relates to retail order flow."

The Commission seems to be referring to the issues of retail order price improvement and payment for order flow (PFOF). While we would like to see more competition for retail order flow and the end of PFOF, we are concerned that the SEC sub-penny tick proposal will create new problems for institutional investors.

We have some questions about the SEC's sub-penny tick proposal:

1-What defines a tick constrained stock?

Based on the research reports and comments that we have seen so far, most industry participants seem to favor ½ penny ticks on “tick constrained stocks”. But what defines a tick constrained stock? The SEC defines tick constrained with a sole measurement of Time-Weighted Average Quoted Spread. For example, the SEC suggests $0.002 ticks for stocks that have a spread greater than $0.008 but less than or equal to $0.016. In the proposal, the SEC estimates that 1,707 stocks would qualify for either a $0.001 or $0.002 tick size. However, there have been numerous other suggestions by industry participants on how to define tick-constrained.

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2-Is a one-dimensional spread analysis the best way to define tick constrained?

We think the Cboe devised a better method to define tick-constrained. Cboe contends that there needs to be "objective and selective criteria" used to determine which stocks are truly tick constrained. They propose that the criteria should be: tight average inside quoted spread, high quote-size-to-trade-size ratio (Quote-Trade Ratio) and high average daily notional turnover (Notional Turnover Ratio). When using this multi-dimensional approach, the Cboe whittles down the over 10,000 securities universe to **less than 100 securities** that would qualify for a ½ penny tick.

3-What happens to Rule 611, also known as the order protection rule, in a sub-penny tick environment?

Rule 611 was approved with Reg NMS and states:

> "The core of Rule 611 is paragraph (a)(1), which promotes intermarket price protection of orders by restricting the execution of trades on one venue at prices that are inferior to displayed quotations at another venue."

More specifically:

> "To be protected, a quotation must be the “best bid” (highest-priced bid) or “best offer” (lowest-priced offer) of a national securities exchange or a national securities association."
>
> "This means that Rule 611 only applies to the best prices on a national securities exchange or the ADF. **It does not cover any additional depth-of-book prices that are outside the best prices displayed** by an automated trading center (lower prices for bids and higher prices for offers)."

Here is an example of what could happen in a sub-penny tick world:

- Stock is quoted at $10.10-$10.11
- The best bid is on NYSE with $10.10 for 1,000 shares
- Next best bid is Nasdaq with a $10.09 bid for 500 shares.
- New NYSE bid at $10.101 for 100 shares enters the market

- Market is now $10.101- $10.11
- A sell order of 1,000 shares with a limit of $10.09 enters the market

In our example, the $10.10 bid is no longer a protected quote under Rule 611 and could be traded though since it is not the best bid **on that exchange**. Of course, under best execution guidelines, we would think "reasonable diligence" would dictate that the seller would still clear the bids before moving to the $10.09 bid. Maybe they would but maybe they would not? Maybe the seller's order router does not look at depth of books and instead routes the order to the top of books down to the limit price? If that happened, the $10.10 bid might only receive 400 shares in the above scenario even though the limit price is better than the next top of book quote.

The fact remains that **under Rule 611 only the top of book at each exchange is protected**. If the SEC proceeds with their sub-penny quote proposal, then we would suggest extending Rule 611 to include all depth of book lit quotes and not just top of book quotes.

4-Why wasn't a wider tick increment proposed?

A recent Stanford Business School paper titled "Tick Size Tolls: Can a Trading Slowdown Improve Earnings News Discovery?" looked at the data from the US Tick Size Pilot Program and concluded that the higher tick size led to a substantial drop in automated trading. The study noted that during the tick pilot, there was evidence that high frequency traders (HFTs) were not as active since their risk/reward due to higher ticks drove them away from the small cap segment of the market. In other words, wider ticks in less active stocks reduced the amount of HFT noise. We agree and think that a wider tick may help promote more liquidity in small/mid-cap stocks which already have wider spreads.

5- What are the unintended consequences of sub-penny pricing?

In the final Reg NMS rule written in 2005, the Commission noted a variety of problems that sub-penny quoting could cause, including the following:

> • "If investors' limit orders lose execution priority for a nominal amount, investors may over time decline to use them, thus depriving the markets of liquidity."
>
> • "When market participants can gain execution priority for an infinitesimally small amount, important customer protection rules such as exchange priority rules and

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NASD's Manning rule could be rendered meaningless. Without these protections, professional traders would have more opportunity to take advantage of non-professionals, which could result in the latter either losing executions or receiving executions at inferior prices."

• "Flickering quotations that can result from widespread sub-penny pricing could make it more difficult for broker-dealers to satisfy their best execution obligations and other regulatory responsibilities. The best execution obligation requires a broker-dealer to seek for its customer's transaction the most favorable terms reasonably available under the circumstances. This standard is premised on the practical ability of the broker-dealer to determine whether a displayed price is reasonably obtainable under the circumstances."

• "Widespread sub-penny quoting could decrease market depth (i.e., the number of shares available at the NBBO) and lead to higher transaction costs, particularly for institutional investors (such as pension funds and mutual funds) that are more likely to place large orders. These higher transaction costs would likely be passed on to retail investors whose assets are managed by the institutions."

• "Decreasing depth at the inside also could cause such institutions to rely more on execution alternatives away from the exchanges and Nasdaq that are designed to help larger investors find matches for large blocks of securities. Such a trend could increase fragmentation of the securities markets."

We agree with the Commission's comments from 2005 and fear that sub-penny quotes, especially \$0.001 and \$0.002, will create a whole new set of problems and a whole new set of opportunities for high-speed traders to take advantage of institutional and retail investors.

Themis Trading suggestion for tick sizes:

Our suggestion for the SEC would be to eliminate \$0.001 and \$0.002 ticks from the proposal and to adopt a methodology similar to the Cboe framework to determine if a stock is tick constrained and eligible for a \$0.005 tick. We also think the SEC should consider including a wider tick size for less liquid small and mid-cap stocks.

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Access Fees

In 2005, Reg NMS set the cap on exchange access fees at $0.003/share or 30 mils/share. The SEC's proposal recommends that access fees be reduced to either $0.001/share or $0.0005/share depending on the pricing increment of the stock. Reducing access fees will also likely reduce rebates since most exchanges will probably not want to lose money on a trade. We support this reduction in access fees for the following reasons:

1) Lower access fees will reduce exchange rebates and potentially lessen order routing conflicts.

According to the SEC, "the Commission estimates that the reduction in the access fee cap would lead to a decrease in the total access fees collected and rebates distributed of approximately $3.8 billion per year, amounting to a 73% reduction in access fees paid or an 80% reduction in rebates distributed." While we would have preferred to see an elimination of rebates altogether, reducing access fees is a good start.

2) Lower access fees will not harm the major exchanges.

Even though the access fee will be cut by at least 2/3, the SEC estimates that exchanges stand to lose only $89 million per year since their net transaction capture rate will likely only be slightly reduced.

3) Rebates distort supply and demand and harm the price discovery process.

We have long contended that rebates distort order routing. According to the SEC, they also are responsible for subsidizing liquidity and damaging the price discovery process. The SEC writes in their proposal:

> "High access fees and rebates can distort liquidity supply and demand by artificially increasing the cost of taking liquidity and the revenue to providing liquidity. This dynamic creates an environment with too much liquidity supply relative to liquidity demand.
>
> This reduction in liquidity provision likely means that some proprietary trading desks and firms that currently specialize in providing liquidity and capturing rebates would cease operation as the market adjusts from one with significant liquidity subsidization to

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> one with less subsidization and where the ask and bid prices are more reflective of the forces of supply and demand for liquidity."

4) Lowering rebates and reducing liquidity subsidization could help institutional investors.

According to the SEC, "Less competition to provide liquidity means that queue lengths could decrease and fill rates increase because it would be easier to get to the front of the order book. This effect could allow non- high frequency traders more opportunity to fill orders using liquidity-providing instead of liquidity-demanding transactions."

5) Complex order types, like post-only orders, could be eliminated which would simplify market structure.

According to the SEC, "The reduction of the access fee cap, as well as relaxing of the tick constraint, could also simplify markets by reducing the need for complex order types that are designed to take advantage of the system of fees and rebates...This simpler market structure could reduce the cost associated with designing and executing an order routing strategy and could thus decrease transaction costs. Simpler fees and rebates could also translate into a reduced frequency and complexity of amendments to exchange access fees and rebates."

6) Volumes may migrate back to lit exchanges.

The SEC speculated that "A lower access fee cap could induce some trading volume that currently transacts on ATSs to revert to exchanges. This would occur to the extent that traders who may route orders to ATSs in order to avoid high access fees instead route orders to exchanges due to lower access fees."

Themis Trading suggestion for access fees:

We support the lowering of access fees and believe that this change will be a win for long-term investors. Since Reg NMS was enacted in 2007, the major exchanges have been subsidizing low quality liquidity provided by fleeting HFT liquidity. Much of this liquidity often disappears just as fast as it showed up whenever there is the potential for adverse selection. Reducing the access fees will reduce the amount of rebates which will reduce the amount of HFT trading noise. This reduction in low quality liquidity will have the added benefit of eliminating some complex order types and low-cost order routing strategies. Either way we look at it, this proposal should benefit the long-term investor.

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Two Recommendations that will increase transparency while reducing information leakage

We believe that the equity market could be made more transparent and have less information leakage if the following two changes were made: eliminate order-by-order exchange proprietary data feeds and add a market center code for each non-exchange market center.

1) Eliminate order-by-order exchange proprietary data feeds

If the SEC would like to encourage more displayed liquidity, market participants need to feel more secure that information on their orders is not being leaked. All of the major stock exchanges sell proprietary data feeds that contain information on an order-by-order basis. This means that every detail about a displayed order is provided to consumers of these proprietary data feeds including the order entry time along with a unique order id. This order id will reveal the historical details of an order such as the time of a cancellation or revision. It is therefore possible that some smart consumers of these data feeds may figure out patterns that emerge from certain institutional algorithms and use it to their advantage.

Themis Trading has long been concerned about the leakage of information from proprietary data feeds. In our May 2010 white paper titled "Exchanges and Data Feeds: Data Theft on Wall Street", we exposed how consumers of certain stock exchange data feeds were able to trace the life of an order and decipher valuable information about that order which helps determine the future price of a stock. Two exchanges, BATS and NASDAQ, were leaking information on hidden orders that were placed on their exchanges. These exchange data feeds were revealing more information than just the original order, depth of book and trade executions. They were revealing information that could help detect hidden and reserve book orders.

In our 2012 book, "Broken Markets", we called on the exchanges to give users the ability to opt out of these order-by-order proprietary data feeds:

> "Why should exchanges be allowed to provide the equivalent of a DVR recording of every movement you make during the trading day? Exchanges should give investors the ability to opt out of the private data feeds."

In our 2017 testimony before the House Financial Services Committee, we again called for the elimination of order-by-order data feeds. We testified:

> "Individual order information should not be fair game to be made available by the exchanges to the highest bidder. We think a better alternative is to only allow exchanges to provide order information on an aggregated basis."

Are order-by-order data feeds necessary? The answer is no. In fact, there is one stock exchange, IEX, that only provides an aggregated data feed. In other words, IEX does not provide information about individual orders. We think that if all stock exchanges switched to this model, then investors would feel more confident in adding displayed liquidity, which would strengthen the price discovery process. Of course, we expect that this recommendation will meet with stiff resistance from the major stock exchanges since they earn a large share of their revenue from these proprietary data feeds.

2) Add a Market Center Code for each non-exchange market center

If the Best Execution proposal is approved, we would like to recommend one change that we think should help brokers comply with their best execution requirements when it comes to searching for mid-point liquidity.

While the SEC has access to CAT data and can identify if hidden orders existed at the midpoint, brokers do not have access to this data and need to blindly search for this hidden liquidity. Currently, trades that are priced inside the NBBO could be occurring on an ATS, a non-ATS or even on an exchange as part of a hidden order. ATS and non-ATS trades are only identified as occurring on a TRF (Trade Reporting Facility) and do not currently identify the market center where the trade occurred.

The Commission identified this problem in their 2009 proposing release, Regulation of Non-Public Trading Interest, and proposed adding a market center identifier for off-exchange ATS trades:

> "The Commission preliminarily believes that the current level of post-trade transparency for ATSs is inadequate. Requiring ATS trades to carry a specific identifier that would be disseminated publicly would equalize the trade reporting requirements for exchanges and ATSs, both of which operate systems that bring together orders of multiple buyers and sellers on an agency basis. Accordingly, the Commission is proposing to amend the Plans to require the disclosure of the identity of individual ATSs on trade reports in the public data stream, the same way exchange trades are identified. Requiring the public disclosure of the individual ATS that executed a trade should enable market participants to better assess in real-time where executions in particular securities are occurring among various ATSs in the over-the-counter market. In addition, the proposal should

> allow more reliable trading volume statistics to be calculated for individual ATSs. The Commission preliminarily believes this should enhance the ability of broker-dealers and their customers to more effectively find liquidity and achieve best execution in the over-the-counter market."

Since 2009, off-exchange volume has continued to grow and now represents almost 50% of all US equity volume. Unfortunately, the 2009 SEC proposal to add a market identifier was never adopted. We urge the SEC to reconsider and **add a new market center code** to identify the market center that printed the off-exchange trade. Identifying the market center with a new code will help brokers identify where hidden liquidity has been trading which could then help them source better prices and aide in the compliance of the new best execution rule.

Conclusion

We applaud the SEC for their thoughtful suggestions to strengthen the US equity market. Since Reg NMS was implemented in 2007, the US equity market has consisted of a fragmented maze of dozens of market centers where liquidity needs to be stitched back together. Retail and institutional orders need to pass through this maze, which is peppered with economic conflicts of interests, before receiving an execution. Status-quo insiders, who profit handsomely from this system, will tell you that retail investors have never had it better. They will tell you that the new rules will harm liquidity provision. They will say that the proposed rules are a solution in search of a problem. They will demand that pilot programs are put in place (even though these have already been done) before any new rule is approved. They will threaten to sue the SEC.

The major stock exchanges will also complain about the new rules and try to slow down any changes. It is important to remember that the three major stock exchanges - NYSE, Nasdaq and Cboe - are all public companies that have an obligation to increase shareholder wealth. Unfortunately, as we have seen numerous times, this obligation often supersedes investor protection.

We hope that the SEC is not swayed by these insiders and major stock exchanges and instead approves the necessary changes to strengthen our market.

Respectfully,

Joseph Saluzzi

Partner, Themis Trading LLC