



May 26, 2020

VIA ELECTRONIC DELIVERY

Ms. Vanessa A. Countryman
Secretary
U.S. Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

RE: Proposed Rule on Market Data Infrastructure (Release No. 34-88216; File No. S7-03-20)

Dear Ms. Countryman:

Virtu Financial, Inc. (“Virtu”)¹ respectfully submits this letter in response to the above-referenced proposed rule issued by the Securities and Exchange Commission (the “SEC” or “Commission”) on February 14, 2020 (the “Proposal” or “Proposed Rule”),² which would update the national market system for the collection, consolidation, and dissemination of information with respect to quotations for and transactions in national market system (“NMS”) stocks (“NMS information”). Specifically, the Proposed Rule would expand the content of NMS information that is required to be collected, consolidated, and disseminated as part of the national market system under Regulation NMS, and would amend the method by which such NMS information is collected, calculated, and disseminated by introducing a decentralized consolidation model where competing consolidators replace the exclusive securities information processors.

Virtu applauds and supports the Commission’s thoughtful attention to a number of important topics related to U.S. equity market structure, including potential amendments to the regulatory framework governing market data and market access. We were especially pleased to see the Commission – in a unanimous vote – adopt an Order (the “NMS Plan Order”) earlier this month directing the Exchanges and FINRA to adopt a single, consolidated NMS Plan and introducing important governance enhancements to eliminate potential conflicts of interest associated with the dissemination of consolidated equity market data.³ The NMS Plan Order represents a very important step forward in enhancing the transparency and efficiency of U.S.

¹ Virtu is a leading financial firm that leverages cutting edge technology to deliver liquidity to the global markets and innovative, transparent trading solutions to its clients. Virtu operates as a market maker across numerous exchanges in the U.S. and is a member of all U.S. registered stock exchanges. Virtu’s market structure expertise, broad diversification, and execution technology enables it to provide competitive bids and offers in over 25,000 securities, at over 235 venues, in 36 countries worldwide. As such, Virtu broadly supports innovation and enhancements to transparency, fairness, and competition which enhance liquidity to the benefit of all marketplace participants.

² *Market Data Infrastructure*, SEC Release No. 34-88216; File No. S7-03-20 (Feb. 14, 2020), available at <https://www.sec.gov/rules/proposed/2020/34-88216.pdf>.

³ *Order Directing the Exchanges and the Financial Industry Regulatory Authority to Submit a New National Market System Plan Regarding Consolidated Equity Market Data*, SEC Release No. 34-88827; File No. 4-757 (May 6, 2020), available at <https://www.sec.gov/rules/sro/nms/2020/34-88827.pdf>.

equity market structure, and builds on the strong foundation of substantive analysis undertaken and enhancements made by the Commission and staff over the past three years.⁴

The Commission's Proposed Rule on Market Data Infrastructure, however, is a true "game changer" that presents a unique opportunity to dramatically revolutionize the SEC's regulatory regime governing equity market structure and to level the playing field for market participants. As Chairman Clayton and Director Redfearn (Division of Trading and Markets) have observed, our marketplace has evolved (or, we would submit, devolved) into a two-tiered system of market data and market access, with (i) so called "core data" distributed through the consolidated SIP data feeds and (ii) an array of proprietary data products and access services that the exchanges and other providers sell to the marketplace.⁵ As dozens of market participants have repeatedly expressed, including at the October 2018 Market Data Roundtable, and in the comment file for the Proposed Rule, the "core data" offered through the SIPs is no longer sufficient for most market participants to trade competitively in today's marketplace.

Simply put, in today's automated and interconnected markets, all data is "core data". In order for a firm to compete – and indeed, as some have asserted, in order for a firm to meet its best execution obligations – under the current regulatory construct, market participants are forced to pay high and ever increasing rents (in the form of proprietary feeds and market connectivity costs) to the exchanges, which currently enjoy an oligopoly over the provision of market data and market access. Although the Proposed Rule will not completely eliminate the two-tiered system of market data and market access – as firms like Virtu will still need to access Exchanges' proprietary feeds to remain competitive – it makes significant strides to enhance competition in the marketplace.

⁴ Among other steps the agency has taken in this area, we especially commend (i) the Commission's October 2018 decision to set aside certain NYSE Arca, Inc. and Nasdaq Stock Market LLC market data fee filings that were the subject of long running litigation (the "Data Fee Decision") and to remand over 400 challenged fee filings to the exchanges for additional review, (ii) the robust dialogue made possible by the two-day Market Data Roundtable hosted by the SEC in late October 2018, (iii) the informative commentary on and analysis of a number of market structure issues offered by SEC Chairman Clayton and Director of the Division of Trading and Markets Redfearn in April 2019, (iv) the *Staff Guidance on SRO Rule Filings Relating to Fees* issued in May 2019, (v) the Commission's approval of proposed amendments to Rule 608 rescinding the "effective upon filing" procedure for NMS Plan fee amendments; and (vi) the Commission's actions to suspend a number of fee proposals deemed not to be fair, reasonable and not unreasonably discriminatory.

⁵ See, e.g., Walter J. Clayton, Chairman, U.S. Securities and Exchange Commission, and Brett Redfearn, Director of the SEC's Division of Trading and Markets, Remarks at Gabelli School of Business, Fordham University, New York, New York (Mar. 8, 2019) (Clayton: "We currently have what can be generally described as a two-tiered system of market data and market access in the U.S. equity markets.") (Redfearn: "I believe we must assess whether the current core data system is contributing to a bifurcated landscape of market data that calls into question whether access to markets remains fair and not unreasonably discriminatory. We must also examine whether modifications to core data should be made to ensure that core data continues to facilitate best execution in a complex and evolving trading ecosystem."), available at <https://www.sec.gov/news/speech/clayton-redfearn-equity-market-structure-2019>.

Furthermore, the Proposal will help “democratize” access to our capital markets by remaining committed to the spirit of Regulation NMS’s original intent – to create a single “national market” through the creation of a National Best Bid Offer that inbound orders can reasonably access without directly (NMS Rule 610) or indirectly (through arbitrary increases in market data or connectivity costs) charging fees higher than statutorily agreed upon.

Virtu therefore strongly supports the Commission’s Proposed Rule, with a handful of minor proposed modifications as described below.

Virtu Supports Amending the Definition of Round Lots

Welcome to 2020.

Over the past two decades, as stock splits have become less common, the dispersion of share prices has increased dramatically. As reported in an October 2019 *Wall Street Journal* article, the average share price of S&P stocks has increased from \$43.10 in 2000 to \$131.40 today.⁶ According to our data, in 2002, 90% of Russell 3000 stocks were priced below \$40, with only 0.3% over \$100. Today just 67% of Russell 3000 stocks are priced below \$40, with more than 11% over \$100. At the same time that stock prices have ballooned, the average “retail” order size has remained constant. According to our data, since 2007, retail trade values (based on share size and total dollars) have remained very small. We estimate the average retail trade size between 2007 and the present is around 436 shares or \$14,581.

The result of this trend is that – especially for retail investors in many high-priced FAANG symbols – odd lots have become the rule instead of the exception. In order to align the data available in the SIP to the reality of today’s marketplace and average share prices, Virtu strongly supports the concept of amending the definition of round lots. However, we suggest that the Proposal be streamlined from the current five categories of round lots to three. Specifically, we would recommend defining round lots as:

- 100 shares for stocks priced from \$0.00 - \$500.00
- 10 shares for stocks priced from \$500.01 - \$1,000.00
- 1 share for stocks priced from \$1,000.01 or more

The increase in message traffic resulting from amending the definition of round lots is already going to be incredibly voluminous, and the corresponding systems and implementation burdens therefore will be significant. Streamlining the number of round lot categories from five to three would ease these burdens for all market participants and the Exchanges, while still achieving the Commission’s goal of expanding access to information about smaller, odd lot orders to retail investors and others who do not have access to Exchanges’ proprietary feeds. We also

⁶ *Tiny ‘Odd Lot’ Trades Reach Record Share of U.S. Stock Market*, WALLSTJRNL (Oct. 22, 2019), available at <https://www.wsj.com/articles/tiny-odd-lot-trades-reach-record-share-of-u-s-stock-market-11571745600?mod=searchresults&page=1&pos=1>.

understand that SIFMA and several other market participants agree that three categories of odd lots would be preferable.

Importantly, the evolution of the marketplace to include higher and higher share prices and more and more odd lot orders highlights another chapter of the SEC’s rulebook that needs to be updated – Rule 605.⁷ Specifically, the existing share buckets in Rule 605 are no longer a reasonable measure of what constitutes a “retail order” in today’s markets. Because issuers generally are no longer splitting their stocks, the 10,000 share exemption threshold is woefully outdated. And depending on the price of the shares, the order size buckets under Rule 605 correspond to trades of very different values, which may render a “shares-per-trade” analysis ineffective for the purpose of segmenting trades to evaluate orders in terms of how difficult they are to fill or how much they may cost to fill. As a result, these large notional value trades tend to distort the Rule 605 metrics, as the average retail investor does not typically transact in \$100,000+ increments. Consequently, the inclusion of these large trades in Rule 605 metrics diminishes the effective use of this data for the typical retail investor – the very person the rule was initially designed to help. It is time to update Rule 605 to include notional value order measurements.

In addition, many of the Rule 605 execution quality share buckets now bear little relation to the average trade sizes sent by the majority of investors. Shares-per-trade has become even less effective at segmenting trades by difficulty (or expected cost). In fact, higher stock prices have led to retail trades increasingly becoming odd-lots. As reported by the *Wall Street Journal*, almost half of all trades are odd-lots, hitting a record 48.9% on Oct. 7 and hovering above 40% ever since, “driven by the growing number of expensive stocks such as Amazon Inc., with prices above \$1,000 a share, and the rise of computerized trading strategies that, unlike human traders, don’t think in multiples of 100.”⁸ Even more stark, our data from 2019 to present show that the vast majority (over 75%) of all trades are still for less than \$10,000, and consequently, for stocks with prices over \$50, about 70% of trades are odd-lot orders which would not be captured by the current Rule 605.

The Proposal’s introduction of newly defined categories of round lots is “Exhibit A” supporting the need for an update to Rule 605. If the Proposal is adopted, the current Rule 605 construct would base execution quality for a 5,000 share order of Amazon (with a \$12 million+ notional value at today’s prices) on the bid/ask price of 1 displayed share. Obviously, in order to more accurately reflect execution costs, a significant overhaul of Rule 605 would be necessary, including possibly expanding measurement of execution quality to include depth of book.

Virtu would welcome the opportunity to be a resource to the Commission in studying this important modernization initiative related to Rule 605.

⁷ 17 CFR § 240.605.

⁸ *Supra* n. 6.

Virtu Recommends Further Study or a Pilot Before Applying the Order Protection Rule to Newly Defined Round Lots

In connection with the Proposal, the Commission is contemplating applying the Order Protection Rule to the newly defined round lot sizes. We understand and appreciate the Commission’s rationale for suggesting that the new round lots should be protected, but we are concerned about introducing such a significant change to the operation of the markets without the benefit of empirical and experiential analysis of its potential impact. As the Commission recognizes in the Proposal, there is a wide array of unknown variables – and potentially unintended consequences – that could flow from such a change.

For example, it is possible that protected quotes could widen because odd-lot shares at multiple price levels could no longer be aggregated together to create a protected quote. This effect could be especially prevalent in high priced stocks, which, as described above, have become the rule rather than the exception. Protecting the new round lots could also significantly alter the behavior of market makers like Virtu, impacting their approach to internalization and affecting their capacity to provide price improvement to retail investors. It could also dramatically alter the flow of orders to the exchanges and other trading venues. And, of course, it would impose unknown, but surely significant, implementation costs on market participants.

Because there are so many unknowns associated with applying the Order Protection Rule to the newly defined round lots, Virtu respectfully submits that further data-driven analysis – or even a pilot – is the better course of valor before introducing such a significant change. We recognize that protecting these quotes could, in fact, enhance trading quality for retail investors, an objective Virtu fully supports. However, we urge the Commission to work with the industry to ensure that we avoid any unintended consequences that could negatively impact equity market structure or the retail investing experience.

Virtu Supports the Inclusion of Auction Imbalance and Depth of Book Information in the SIP

Virtu is also supportive of the addition of depth of book data and auction imbalance information in the SIP. As noted above, the reality is that in today’s marketplace all data is “core data” and the inclusion of depth of book and auction imbalance data would significantly close the information gap between the SIP and the Exchanges’ proprietary feeds. In recent years, opening and closing auctions have become increasingly more important to the trading strategies of our clients, and we believe that including data about these key bookends to the trading session in the SIP will help to level the playing field for investors. Similarly, including depth of book information in the SIP will allow investors who cannot afford to pay for costly Exchange proprietary feeds to trade more competitively in the marketplace, and we believe five levels of depth of book is a reasonable and appropriate place to land.

While many market participants, including Virtu, will still need to purchase Exchange proprietary feeds, we believe that including auction and depth of book information may reduce some participants’ costs, and represents an important step in democratizing access to the marketplace for all investors, including retail investors.

Virtu Supports Competing Consolidators / Self-Aggregators

For many years, Virtu has been a frequent and vocal supporter of efforts to introduce competition to the marketplace for market data and market access. Under the current regulatory construct, exchanges enjoy an oligopoly in which they effectively control the dissemination and sale of all equity market data—data which securities trading and institutional firms have no choice but to purchase, regardless of the cost, if they want to remain competitive in the marketplace. This structure has led to accelerating and significant price escalation for market data and market access, both with respect to data disseminated through the SIPs and data available in Exchanges’ proprietary feeds.

While pricing for SIP data has not accelerated as dramatically as the pricing for Exchanges’ proprietary data has, pricing decisions for the SIP remain squarely in the discretion of a handful of exchanges that sit on the SIP operating committee. Although the SEC’s recent NMS Plan Order introduces a number of enhancements and protections to that process, the current regulatory construct still suffers from a lack of competitive forces that would otherwise ensure that pricing for SIP data is fair, reasonable, and not unduly discriminatory.

The SEC’s Proposed Rule would change that by introducing a “decentralized consolidation model under which competing consolidators, rather than the existing exclusive SIPs, would collect, consolidate, and disseminate certain NMS information. To support this decentralized model, the proposal would require each SRO to make available all of its data that is necessary to generate NMS market data to two new categories of entities: (1) competing consolidators, which would be responsible for collecting, consolidating and disseminating consolidated market data to the public; and (2) self-aggregators, which would be brokers or dealers that elect to collect and consolidate market data solely for their internal use.”⁹

Virtu strongly supports the introduction of competing consolidators and self-aggregators to the marketplace. Indeed, we recommended the development of a similar construct in the letter we submitted in advance of the October 2018 Roundtable on Market Data and Market Access. In that letter, we stated:

“The Commission should require the Exchanges to provide access to their raw data at cost and allow for the development of competitors who may sell market data products such as the aggregated NBBO, depth of book data, and other products they might conceive.”¹⁰

The Proposed Rule’s addition of competing consolidators and self-aggregators is an elegant solution that achieves the Commission’s objective of introducing competition to the marketplace, while still preserving a significant role for the exchanges to participate. We fully support this

⁹ *SEC Fact Sheet*, Market Data Infrastructure (Feb. 14, 2020), available at <https://www.sec.gov/news/press-release/2020-34>.

¹⁰ Letter from Doug Cifu to Brent Fields, Secretary, U.S. Securities and Exchange Commission (Oct. 23, 2018), available at <https://www.virtu.com/uploads/2019/02/2018.10.23-Virtu’s-Comment-Letter-Roundtable-on-Market-Data-and-Market-Access.pdf>.



aspect of the proposal and urge the Commission to adopt such a model as part of a final rule. However, we encourage the Commission to take into account two potential risks that could undermine the effectiveness of the competing consolidator and self-aggregator models.

First, for the competing consolidator and self-aggregator models to be successful, the Commission must take steps to ensure that pricing for the data made available by the Exchanges to such entities are fair, reasonable, and not unfairly discriminatory. This aspect of the Proposal will fall flat on its face if the Exchanges are allowed to charge exorbitant prices for the provision of such data.

Second, the introduction of the competing consolidator and self-aggregator models will not meet their intended objectives without an overhaul of Rule 605. The requirements for order execution information under Rule 605 have not been updated since they were adopted almost two decades ago. Even at that time, the SEC acknowledged that there was not uniform support in the industry for the share bucket categories specified in the rule and observed that “experience with the Rule may indicate ways in which [the categories] could be improved in the future.”¹¹ Since then, market structure has changed so that stock prices are higher, trade values falling within the order size buckets under Rules 600 and 605 are higher, yet trade values for retail orders have remained steady. We respectfully submit that the introduction of competing consolidators and self-aggregators will only further compound the defects in Rule 605, and strongly urge the Commission to promptly consider amendments to bring the Rule into the twenty-first century.

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Virtu appreciates the opportunity to submit this response to the SEC’s Proposed Rule governing Market Data Infrastructure. The Proposal represents the most significant step yet in this Commission’s effort to modernize and democratize a woefully outdated regulatory construct that is no longer “fit for purpose” in today’s marketplace. The significantly wider scope of information that the Proposal seeks to include in the SIP would narrow the gap between what is available in the Exchanges’ proprietary feeds, and we believe would be sufficient for most retail investors and many smaller firms to trade competitively. We also strongly support the introduction of competition into the marketplace in the form of competing consolidators and self-aggregators. Virtu strongly believes that the U.S. equity markets are the most robust, transparent and fair markets in the world, and we applaud the Commission’s efforts to level the playing field for all market participants through this important Proposal.

¹¹ Rule 605 Adopting Release, at 75423.

Respectfully submitted,



Thomas M. Merritt
Deputy General Counsel

cc: Walter J. Clayton, III, Chairman
Allison H. Lee, Commissioner
Hester M. Peirce, Commissioner
Elad L. Roisman, Commissioner
Brett W. Redfearn, Director, Division of Trading and Markets