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March 31, 2023

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

Re: Equity Market Structure Reforms; File Numbers S7-29-22, S7-30-22, S7-31-22, S7-32-22

Dear Ms. Countryman:

The Vanguard Group, Inc. ("Vanguard") appreciates the opportunity to comment on four Securities and Exchange Commission ("SEC" or "Commission") proposals (the "Proposals") to reform equity market structure.[1] Vanguard is a unique, investor-owned investment management firm that offers a large selection of low-cost mutual funds, exchange-traded funds, investment advice, and related services to individual investors, financial professionals, and institutional investors. We manage assets globally on behalf of tens of millions of investors and act as investment adviser to more than 400 funds worldwide. We also operate Vanguard Marketing Corporation ("VMC"), a retail broker-dealer that offers millions of investors the opportunity to meet their financial goals by participating directly in the capital markets, including the equity markets.

Our unique investor-owned structure means the interests of our tens of millions of individual investors—including fund shareholders and broker-dealer clients—are at the center of everything we do, and we share the SEC's interest in improving equity markets for all investors. Equity market structure has improved steadily since the adoption of Regulation NMS in 2005, and though we believe the markets generally work well for investors, key weaknesses persist that frustrate investor outcomes and erode confidence in the market. Historically, Vanguard has advocated for targeted reforms to encourage market participants to display orders, mitigate or disclose conflicts of interest, and deliver transparent and comparable information so investors can make better informed investment decisions.[2]

Our comments address the aspects of the Proposals that will have the greatest impact on these areas, which are critical to investment success. Specifically:

- Among the proposed reforms, the Rule 605 Proposal is most likely to improve investment outcomes because it will empower investors to make more informed decisions about broker-dealer relationships. The Rule 605 Proposal is also the least costly and easiest to implement, and we encourage the SEC to adopt this proposal as soon as possible.

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[1] Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders, 87 Fed. Reg. 80266 (Dec. 29, 2022) ("Regulation NMS Proposal); Order Competition Rule, 88 Fed. Reg. 128 (Jan. 3, 2023) ("Order Competition Proposal"); Disclosure of Order Execution Information, 88 Fed. Reg. 37896 (Jan 20, 2023) ("Rule 605 Proposal"); Regulation Best Execution, 88 Fed. Reg. 5440 (Jan. 27, 2023).

[2] *See e.g.*, Letter from Joseph Brennan, Principal and Global Head of Equity Investment Group, Vanguard, to Brent J. Fields, Secretary, SEC, dated May 25, 2018, *available at* https://www.sec.gov/comments/s7-05-18/s70518-3712174-162393.pdf.

- The proposal to harmonize quoting and trading increments could harm investors and markets and should be carefully considered in light of other changes. We are particularly concerned that tick sizes of less than one half of a cent per share could harm mutual funds and their investors.
- The current $0.003 per share cap on access fees in Rule 610(c) of Regulation NMS has negative effects on markets and investors. The Commission should take an initial step toward mitigating these effects by lowering this cap to no more than one tenth of a cent per share, even if it ultimately decides not to proceed with the proposed tick size changes.
- The Order Competition Proposal introduces new costs and risks that the Commission should consider to avoid unintended consequences. Fundamentally, Vanguard would like to make sure that *all* investors experience the same or better order execution quality from equity market structure reforms.

We also encourage the Commission to implement market structure reforms sequentially to avoid unintended consequences that could harm investors. We suggest that the Commission prioritize the Rule 605 Proposal and the market data infrastructure reforms in the Regulation NMS Proposal. After these reforms are adopted and implemented, the Commission should assess how markets respond and consider the extent to which additional reforms would further improve markets for investors.

The Commission Should Implement Market Structure Reforms Sequentially To Avoid Unintended Consequences that Could Harm Investors

The Proposals encompass a broad array of overlapping market structure reforms that, if adopted together, would affect the most substantial changes to equity market structure since the adoption of Regulation NMS. To protect markets and minimize unintended consequences, we encourage the SEC to undertake these reforms sequentially, prioritizing two reforms that will meaningfully increase transparency for investors and that have a low likelihood of affecting other aspects of equity market structure: the Rule 605 Proposal and the market data infrastructure reforms in the Regulation NMS Proposal. After these reforms are adopted and implemented, the Commission should assess how markets respond and consider the extent to which additional reforms would further improve markets for investors.

As described below, the enhanced disclosures contemplated by the Rule 605 Proposal will empower retail investors to make more informed decisions by providing consistent, comparable disclosures about the execution quality provided by retail broker-dealers. The market data infrastructure reforms would increase transparency about the best priced quotations available in the market, provide investors access to these quotations, and improve execution quality for retail market participants.[3] The Commission—and investors—can realize these benefits without

[3] *See* Rule 605 Proposal at 3862 (noting that the proposal would lead to "improvements in the execution quality received by investors as competition between reporting entities would create incentives to offer better execution quality in order to attract and retain customers and order flow); Regulation NMS Proposal at 80296 (explaining that the Commission determined that NBBO reforms would "help investors…trade in a more informed and effective manner and to achieve better executions…").

significant risk of unintended consequences because both of these reforms would work on a standalone basis and have limited overlap with other aspects of the Proposals.

The Commission also cites improved execution quality as a rationale for many of the other proposed reforms, some of which have significant risks to investors, including the proposals to narrow tick sizes to $0.001 or $0.002 for certain securities and to require most retail orders to be routed to auctions. We believe investors and markets would be best served if the Commission takes an incremental approach to considering these other reforms. We encourage the Commission to first use data from the implementation of the Rule 605 Proposal and the market data infrastructure reforms to measure the effectiveness of the changes, and then to determine whether future reforms may be necessary.

If, after adopting the Rule 605 Proposal and the market data infrastructure reforms, the Commission determines additional reforms are necessary, we recommend focusing on reforms most likely to promote publicly displayed trading interest, specifically, reducing exchange access fees and calibrating tick sizes for tick constrained stocks. If market failings continue to persist, the Commission should then evaluate additional reforms, targeted to address any remaining failings.

Enhanced Disclosure of Order Execution Information Will Empower Investors To Make More Informed Decisions About Broker-Dealer Relationships

Vanguard welcomes the Rule 605 Proposal, which will increase transparency by empowering investors to compare execution quality across broker-dealers and make more informed decisions about their choice of broker-dealer. The proposal also will reduce trading costs for retail clients by further increasing competition among retail broker-dealers and the wholesalers that execute those trades. For these reasons, we believe the Rule 605 Proposal is the single most important equity market structure reform on the table. It is also the least costly and easiest to implement. We encourage the Commission to adopt it as soon as possible.

Rule 605 requires market centers to make available to the public monthly reports that include uniform statistical measures of execution quality.[4] Though the rule provides a helpful baseline level of disclosure, it pre-dates Regulation NMS and has not kept pace with advancements in technology and changes in market behavior. We appreciate that the Rule 605 Proposal would address three of the most important shortcomings in the current reporting regime.

First, the proposal would fill a gap in the coverage of Rule 605 that currently obscures the order handling practices of many broker-dealers. Today, Rule 605's reporting requirements apply to market centers, but many broker-dealers do not meet the definition of a market center and therefore do not make Rule 605 reports. As a practical matter, customers of these broker-dealers

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[4] *See* Disclosure of Order Execution and Routing Practices, 65 Fed. Reg. 75414, 75436 (Dec. 1, 2000), *available at* https://www.govinfo.gov/content/pkg/FR-2000-12-01/pdf/00-30131.pdf.

have no reliable way to evaluate and compare broker-dealer performance.[5] Although some broker-dealers have chosen to voluntarily publish summary-level order execution quality metrics on their websites, these ad hoc disclosures are not universal and, in any event, generally feature statistics brokers prefer to "showcase" that may not reflect the most meaningful measures of execution quality. The Rule 605 Proposal would address this coverage gap by requiring larger broker-dealers to make Rule 605 disclosures, giving customers of these broker-dealers a direct line of sight into broker-dealer performance.

Second, the proposal would address a disclosure gap in existing Rule 605 reports that makes it impossible to compare execution quality on an apples-to-apples basis by requiring disclosure of Effective over Quoted Spread ("E/Q"). We commend the Commission for this aspect of its proposal because E/Q directly quantifies how much of the spread the broker secures for its investor-client. Including E/Q on Rule 605 reports will enable investors to make "apples to apples" comparisons of execution quality, furthering competition among broker-dealers, and improve customer execution quality. No other metric will have this impact.

Third, the proposal would address an accessibility gap in Rule 605 reports. Rule 605 reports contain extensive information that is more accessible for machines than humans. We support the SEC's proposal to require all Rule 605 reporters to make publicly available a summary report of their execution quality statistics in a user-friendly format. A standardized summary report will provide retail investors with a comprehensive overview of the thousands of rows and dozens of columns that appear on Rule 605 reports today. We believe the SEC struck the right balance with the report's level of detail and that these summary reports will further advance efforts to enable more informative comparisons across brokers.

We commend the SEC for proposing to make Rule 605 reports more meaningful and accessible to investors. We encourage the SEC to adopt the Rule 605 Proposal as soon as possible so investors can start realizing the benefits the updated reports will provide.

The Proposal To Harmonize Quoting and Trading Increments Could Harm Investors and Markets and Should Be Carefully Considered in Light of Other Changes

Vanguard agrees with the Commission on the need to update and modernize Rule 612 of Regulation NMS, which establishes a minimum quoting increment on $0.01 for most NMS stocks. We also share the Commission's view that liquidity conditions in some stocks would support tick sizes of less than a penny and that Rule 612 may have contributed to the growth in off-exchange trading in these stocks by keeping spreads artificially wide.

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[5] Customers can attempt to evaluate the performance of these broker dealers through a multi-step, imprecise process that requires analyzing their broker-dealer's Rule 606 report to know where their orders are being routed, then accessing those market centers' Rule 605 reports to review their execution quality. Further complicating matters, market centers may provide different execution quality to orders based on contractual arrangements with different broker-dealers. Those arrangements are not disclosed in current Rule 605 and 606 reports, so to the extent they exist, a true "apples to apples" comparison cannot be made. Rule 605 Proposal at 3791-2.

Though we support reducing tick sizes to one half of a cent for some stocks, we are concerned that the proposal to harmonize quoting and trading in even smaller increments may reduce liquidity and inadvertently harm investors and markets. The proposal to introduce $0.001 and $0.002 tick sizes is particularly problematic for mutual funds and their investors.[6] As tick sizes become more granular, market makers will disperse the capital they use to provide liquidity among the new ticks, thinning liquidity at each level, particularly at the top of exchange order books.[7] This will increase information leakage and discourage all but the fastest market participants from posting liquidity, leading to a rise in flickering quotes as high-speed traders seek queue priority.[8] In addition, the proposal to harmonize trading increments at the minimum tick size could cause retail investors who trade stocks or ETFs through brokerage accounts to lose the benefit of the sub-spread price improvement they receive today.

An incremental approach to tick size reduction and harmonization would mitigate the harms associated with narrowing spreads to less than half a penny and preserve the benefits retail investors currently derive from sub-spread executions. As a first step, the Commission could lower the minimum quoting increment for tick-constrained stocks to a half-penny and raise the minimum trading increment to a tenth of a penny for all stocks priced at $1.00 or more per share.[9] These changes would reduce the competitive discrepancy between exchanges and non-exchanges by providing exchanges greater flexibility to offer sub-penny quotes (including, potentially, mid-point executions at $0.0025 increments) while simultaneously establishing a minimum trading increment for all venues. This incremental approach would allow the

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[6] The Vanguard funds routinely employ trading strategies that provide market liquidity. We expect liquidity providing strategies would become much more difficult to execute, and may no longer be viable, in a market where traders with faster connectivity can obtain queue position for less than one half of a cent. In these instances, institutional investor orders can be left exposed on order books, without the benefit of the order protection rule and with little prospect of a favorable execution, resulting in a decreased incentive to post liquidity. The Commission has long recognized that narrowing tick sizes too far could cause institutional investors to reduce quoting and harm liquidity. *See* Order Granting National Securities Exchanges a Limited Exemption from Rule 612 of Regulation NMS under the Securities Exchange Act of 1934 to Permit Acceptance by Exchanges of Certain Sub-Penny Orders, 71 FR 66352 (Nov. 14, 2006), *available at* https://www.govinfo.gov/content/pkg/FR-2006-11-14/pdf/E6-19120.pdf.

[7] An historical example of this phenomenon occurred in the transition from fractional quoting to decimalization, which was associated with a 67% decline in top-of-book liquidity according to a 2005 GAO study, *available at* https://www.gao.gov/assets/gao-05-535.pdf. Our concern is that we will see similar decline if the Commission narrows tick sizes below one half of a cent. We also agree with other commenters, including the Investment Company Institute (ICI) and Securities Industry and Financial Markets Association, that contend the proposal to reduce tick sizes to $0.001 and $0.002 will reduce the value of protected quotations and increase complexity and operational risks.

[8] The Commission has recognized that U.S. equity markets are "high-speed, latency-sensitive electronic markets where trading is dispersed among a wide range of competing market centers and even small degrees of latency affect trading strategies." *Market Data Infrastructure*¸85 Fed. Reg. 16726, 16728 (Mar. 24, 2020), *available at* https://www.govinfo.gov/content/pkg/FR-2020-03-24/pdf/2020-03760.pdf. This environment discourages all but the fastest market participants from posting their trading interest and the Regulation NMS Proposal will likely exacerbate this dynamic. Reducing the tick size to 10-20% of its current size also reduces by 80-90% the costs associated with trying to step ahead of a better-priced order. Today, if the market is at $10.00 x $10.02, a market participant would need to quote at $10.01 to gain queue priority on either the bid or offer. Under the proposal, however, a market participant could attempt to gain queue priority by submitting a buy order for $10.001 or a sell order for $10.019.

[9] We agree with the ICI that the Commission should consider applying sub-penny tick sizes only to stocks with a time weighted average quoted spread of $0.011 or less that also have large quoted display size and relatively high levels of liquidity during an evaluation period to ensure that adequate liquidity exists to support narrower tick increments.

Commission to gather data to determine whether markets could support and would benefit from further reductions to tick sizes or changes to minimum execution increments.

Vanguard Supports a Significant Reduction in Exchange Access Fees

Vanguard appreciates the Commission's proposal to lower the access fee cap in Rule 610(c) of Regulation NMS, which has had wide-ranging and negative effects on equity markets and investors. When the Commission adopted Rule 610(c) in 2005, it capped access fees at $0.003 per share, primarily to reflect the prevailing rates at trading centers at the time.[10] Markets have become considerably more efficient since 2005, and as the Commission suggests in the proposal, current access fee caps may not be reflective of the actual costs trading centers incur to provide execution services against protected quotations.[11]

The current dynamic harms investors and reducing access fees would improve the situation considerably. Under Rule 610(c) of Regulation NMS—and perhaps due to a lack of other incentives to post liquidity—national securities exchanges have chosen to compete for order flow through maker-taker pricing models, using the fees charged to "takers" of liquidity to provide rebates to liquidity providers. These pricing models can create conflicts of interest with a broker's obligation to obtain best execution for a customer, undermine market transparency because fees and rebates do not appear in the prices displayed by exchanges or provided on trade reports, and contribute to market complexity by encouraging rebate arbitrage strategies and the proliferation of new order types and trading venues designed to exploit different transaction pricing models.

We encourage the Commission to take an initial step toward addressing these issues by lowering the access fee cap in Rule 610(c) to no more than $0.001 per share to ensure these fees again comprise a small portion of trading costs to reduce conflicts and increase transparency. Although the Commission describes changes to Rule 610(c) as a necessary change to market structure if the minimum quoting increment is lowered from $0.01, the current harms associated with the $0.003 access fee cap and maker-taker pricing models exist at current tick sizes. Accordingly, the Commission should consider reducing the access fee cap even if it ultimately decides not to proceed with the proposed tick size changes.

The Order Competition Proposal Introduces New Costs and Risks that Should Be Carefully Considered To Avoid Unintended Consequences

As both an asset manager and retail broker-dealer, Vanguard has a unique perspective and interest in the changes being proposed to the handling of retail orders, which are often routed to wholesalers and internalized, rather than sent to national securities exchanges.[12] We support

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[10] *See* Regulation NMS Proposal at 80289 (citing the Regulation NMS adopting release).

[11] *See* Regulation NMS Proposal at 80290, n.297.

[12] This practice is generally referred to as "segmentation." *See* Order Competition Proposal at 149 for definition of "segmented order."

reforms that promote greater interaction of order flow and understand that additional public competition for orders could be desirable, both for the individuals who submit their orders and for the broader market, if posted liquidity increases. We question, however, whether a requirement to submit retail orders to auctions before they could be executed internally would improve outcomes for retail investors, and we offer several considerations for the Commission. We encourage the Commission to prioritize the reforms above and measure progress before introducing the additional complexity and uncertainty associated with the Order Competition Proposal.

As described above, Vanguard fully supports the Commission's goal of improving execution quality for retail investors, and many of the proposed reforms will advance that objective. The Rule 605 Proposal, for example, will provide greater transparency into the execution quality provided by broker-dealers, encouraging greater competition among broker-dealers and more informed trading decisions by investors. Similarly, the market data infrastructure reforms will improve execution quality by making the best prices available in the market more visible and accessible to investors. These reforms can be implemented quickly, at low cost, and with minimal risk of unintended consequences (e.g., the potential for investor harm). Moreover, early adoption and implementation of these reforms will enable the Commission to assess whether investors would benefit from additional market structure reforms.

If the Commission ultimately determines to pursue additional reforms, we suggest that it consider:

(1) Whether information leakage from auctions could unintentionally result in some retail investors receiving worse execution (e.g., due to information leakage, the market cap or liquidity profile of the stock, or the characteristics of the client).[13]
(2) The additional operational complexity associated with implementing retail auctions at scale (millions of auctions a day), including how retail orders would be handled during an outage at a national securities exchange or securities information processor.
(3) How auction fees could affect investor pricing. Even though the Order Competition Proposal contemplates that there would be no charge for sending an order to an auction, the fees that bidders face would likely affect investors' ultimate outcomes.

Fundamentally, we would like to make sure that *all* investors experience the same or better order execution quality under any future regime and we encourage the Commission to consider these factors and engage deliberately and sequentially to avoid unintended consequences.

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[13] As part of this inquiry, the Commission could consider the extent to which institutional investors will participate in auctions because many institutions (e.g., index funds) and retail investors tend to trade different securities and at different times. Only 11 percent of orders placed with VMC are executed during the last hour of trading, which is the time of day when Vanguard's index funds are most active. In addition, 16 percent of orders placed with VMC are executed at market open when there is a lower likelihood of institutional participation.

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Vanguard appreciates the opportunity to comment on the proposal. If you have any questions or would like to discuss our views further, please contact George Gilbert, Head of U.S. Regulatory Affairs, at george_gilbert@vanguard.com.

Sincerely,

/s/ Gregory Davis

Gregory Davis
Managing Director and Chief Investment Officer
The Vanguard Group, Inc.

/s/ Matthew Benchener

Matthew Benchener
Managing Director, Personal Investor
The Vanguard Group, Inc.

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