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SECURITIES AND EXCHANGE COMMISSION

17 CFR Parts 232 and 240

[Release No. 34-98766; File No. S7-18-23]

RIN 3235-AN29

Volume-Based Exchange Transaction Pricing for NMS Stocks

AGENCY: Securities and Exchange Commission.

ACTION: Proposed rule.

SUMMARY: The Securities and Exchange Commission ("Commission") is proposing a new rule under the Securities Exchange Act of 1934 ("Exchange Act") to prohibit national securities exchanges from offering volume-based transaction pricing in connection with the execution of agency-related orders in certain stocks. If exchanges offer such pricing for their members' proprietary orders, the proposal would require the exchanges to adopt rules and written policies and procedures related to compliance with the prohibition, as well as disclose, on a monthly basis, certain information including the total number of members that qualified for each volume tier during the month.

DATES: Comments should be received on or before January 5, 2024.

ADDRESSES: Comments may be submitted by any of the following methods:

<u>Electronic Comments</u>:

- Use the Commission's internet comment form (https://www.sec.gov/rules/2023/10/feetiers); or
- Send an email to rule-comments@sec.gov. Please include file number S7-18-23 on the subject line.

Paper Comments:

- Send paper comments to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090.

All submissions should refer to file number S7-18-23. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method of submission. The Commission will post all comments on the Commission's website (https://www.sec.gov/rules/proposed.shtml). Comments are also available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m. Operating conditions may limit access to the Commission's Public Reference Room. Do not include personal information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright.

Studies, memoranda, or other substantive items may be added by the Commission or staff to the comment file during this rulemaking. A notification of the inclusion in the comment file of any materials will be made available on the Commission's website. To ensure direct electronic receipt of such notifications, sign up through the "Stay Connected" option at www.sec.gov to receive notifications by email.

A summary of the proposal of not more than 100 words is posted on the Commission's website (https://www.sec.gov/rules/2023/10/feetiers).

FOR FURTHER INFORMATION CONTACT: Richard Holley III, Assistant Director, Yvonne Fraticelli, Special Counsel, Terri Evans, Special Counsel, or Julia Zhang, Special

Counsel, at (202) 551-5500, Office of Market Supervision, Division of Trading and Markets, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549.

SUPPLEMENTARY INFORMATION: The Commission is proposing to add new 17 CFR 240.6b-1 (Rule 6b-1 under the Exchange Act) and amend 17 CFR 232.101 (Rule 101 of Regulation S-T) and 17 CFR 232.405 (Rule 405 of Regulation S-T).

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I. Introduction

A. Background

National securities exchanges ("exchanges") that trade NMS stocks[1] maintain pricing schedules that set forth the transaction pricing they apply to their broker-dealer members[2] that execute orders on their trading platforms.[3] As self-regulatory organizations under the Exchange Act, exchanges are subject to unique principles and processes that do not apply to other businesses.[4] For example, all proposed rules of an exchange,[5] including exchange transaction pricing proposals, must be filed with the Commission.[6] In addition, pricing schedules must be publicly posted on the exchange's website.[7]

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1 See 17 CFR 242.600(b)(55) (defining "NMS stock").

2 Exchange rules limit their membership to registered brokers or dealers. See, e.g., Cboe BZX Exchange, Inc. ("Cboe BZX") Rule 2.3.

3 This release uses the term "price" or "pricing" to refer to the fees (charges incurred for an execution), rebates (refundable credits in connection with an execution), and other incentives (e.g., discounts or caps that are not refundable credits but are credited to the member's billing account) that exchanges assess to their members for transactions on the exchange. Rebates are refundable because they can exceed the fees (transaction fees and other fees) that members incur. See, e.g., Remarks of Chris Concannon, Cboe Global Markets, before the SEC Roundtable on Market Data Products, Market Access Services, and Their Associated Fees, Oct. 25, 2018, Transcript at 74-75, available at https://www.sec.gov/spotlight/equity-market-structure-roundtables/roundtable-market-data-market-access-102518-transcript.pdf ("Five out of the top 10 get a check from us after the costs of their connectivity and market data. So we are cutting them a check monthly after their costs.") ("Remarks of Chris Concannon").

4 See, e.g., 15 U.S.C. 78f and 78s.

5 See 15 U.S.C. 78c(a)(27) (defining "rules") and 17 CFR 240.19b-4(c) (providing further information on the phrase "stated policies, practices, and interpretations").

6 See 15 U.S.C. 78s(b). Exchange pricing proposals are effective immediately upon filing with the Commission because the Exchange Act does not require advance notice or Commission approval before an exchange may implement a pricing change. 15 U.S.C. 78s(b)(3)(A)(ii). Within 60 days after the date of filing of an immediately effective proposal, the Commission may summarily temporarily suspend the proposal if it appears to the Commission that a suspension is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Exchange Act. See 15 U.S.C. 78s(b)(3)(C). If the Commission suspends the proposal, the Commission will institute proceedings under section 19(b)(2)(B) (15 U.S.C. 78s(b)(2)(B)) of the Exchange Act to determine whether the proposal should be approved or disapproved. See 15 U.S.C. 78s(b)(3)(C). At the conclusion of the proceedings, the Commission shall approve a proposal if it finds that it is consistent with the requirements of the Exchange Act, or it shall disapprove the proposal if it does not make such a finding. See 15 U.S.C. 78s(b)(2)(C). If the Commission does not suspend an immediately effective filing on or before the sixtieth day after the filing date, the Exchange Act does not deem the proposal to have been approved by the Commission. See 15 U.S.C. 78s(b)(2)(D) (providing when a proposed rule change shall be deemed to have been approved by the Commission).

7 See 17 CFR 240.19b-4(m).

The Exchange Act further requires that exchange pricing proposals, among other things, provide for the "equitable allocation of reasonable dues, fees, and other charges among its members and issuers and other persons using its facilities"[8] that "are not designed to permit unfair discrimination between customers, issuers, brokers, or dealers"[9] and "do not impose any burden on competition not necessary or appropriate in furtherance of the purposes of" the Exchange Act.[10] With respect to the requirement that the rules of an exchange not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Exchange Act, the Senate Banking, Housing and Urban Affairs Committee report that accompanied the 1975 amendments to the Exchange Act stated that "this paragraph is designed to make clear that a balance must be struck between regulatory objectives and competition, and that unless an interference with competition is justified in terms of the achievement of a statutory objective, it cannot stand."[11]

Section 11A of the Exchange Act[12] directs the Commission to facilitate the establishment of a national market system in accordance with specified Congressional findings. Among the Congressional findings are assuring (i) fair competition among brokers and dealers and among exchange markets, and (ii) the practicability of brokers executing investors' orders in the best market.[13] Rather than setting forth minimum components of the national market system, the Exchange Act grants the Commission broad authority to oversee the implementation, operation,

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8 15 U.S.C. 78f(b)(4).

9 15 U.S.C. 78f(b)(5).

10 15 U.S.C. 78f(b)(8).

11 Securities Acts Amendments of 1975, Report of the Senate Comm. on Banking, Housing and Urban Affairs to Accompany S.249, S. Rep. No. 94-75, 94th Cong., 1st Sess. 11 (1975), at 96 ("Senate Report").

12 15 U.S.C. 78k-1.

13 15 U.S.C. 78k-1(a)(1)(C)(ii) and (iv).

and regulation of the national market system consistent with Congressionally determined goals and objectives.[14]

B. Volume-Based Exchange Transaction Pricing

As part of its ongoing efforts to assess whether aspects of the national market system continue to meet the statutory goals and objectives as markets and market participants evolve, the Commission is considering the impact of volume-based exchange transaction pricing in NMS stocks. Many exchanges use increasingly complex transaction pricing schedules that feature differentiated incentives (e.g., lower fees or higher rebates) that depend on member volume.[15]

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14 See Senate Report, supra note 11, at 8-9.

15 Exchange transaction pricing for NMS stocks is characterized by three different pricing models: (1) maker-taker (where the liquidity providing "maker" receives a rebate from the exchange and the "taker" that executes against that resting order pays a fee to the exchange); (2) taker-maker or inverted (where liquidity takers are offered a rebate and liquidity providers are assessed a fee); and (3) flat (where an exchange does not offer rebates and instead charges a fee to neither side of a trade, one side of a trade, or both sides of a trade). In rebate pricing models, the exchange's transaction revenue ("net capture") is the difference between the fee it collects on one side of the trade and the rebate it pays out on the other side of the trade. As of Mar. 2023, nine exchanges had a maker-taker pricing model. See Cboe BZX pricing schedule, available at https://www.cboe.com/us/equities/membership/fee_schedule/bzx/; Cboe EDGX Exchange, Inc. ("Cboe EDGX") pricing schedule, available at https://www.cboe.com/us/equities/membership/fee_schedule/edgx/; Nasdaq PHLX, LLC ("Phlx (PSX)") pricing schedule, available at https://listingcenter.nasdaq.com/rulebook/phlx/rules/phlx-equity-7; The Nasdaq Stock Market LLC ("Nasdaq") pricing schedule, available at http://nasdaqtrader.com/Trader.aspx?id=PriceListTrading2#rebates; NYSE Arca, Inc. ("NYSE Arca") pricing schedule, available at https://www.nyse.com/publicdocs/nyse/markets/nyse-arca/NYSE_Arca_Marketplace_Fees.pdf; NYSE American LLC ("NYSE American") pricing schedule, available at https://www.nyse.com/publicdocs/nyse/markets/nyse-american/NYSE_America_Equities_Price_List.pdf; New York Stock Exchange, LLC ("NYSE") pricing schedule, available at https://www.nyse.com/publicdocs/nyse/markets/nyse/NYSE_Price_List.pdf; MEMX, LLC pricing schedule, available at https://info.memxtrading.com/fee-schedule/; and MIAX PEARL, LLC ("MIAX Pearl") equities pricing schedule, available at https://www.miaxoptions.com/sites/default/files/fee_schedule-files/MIAX_Pearl_Equities_Fee_Schedule_01012023_1.pdf. As of Mar. 2023, four exchanges had a taker-maker pricing model. See Cboe BYX Exchange, Inc. ("Cboe BYX") pricing schedule, available at https://www.cboe.com/us/equities/membership/fee_schedule/byx/; Cboe EDGA Exchange, Inc. ("Cboe EDGA") pricing schedule, available at https://www.cboe.com/us/equities/membership/fee_schedule/edga/; and NYSE National, Inc. ("NYSE National") pricing schedule, available at https://www.nyse.com/publicdocs/nyse/regulation/nyse/NYSE_National_Schedule_of_Fees.pdf. Nasdaq BX, Inc. ("BX") also uses the taker-maker pricing model but charges a $0.0007 fee if a member fails to reach any liquidity removing rebate tier. See BX pricing schedule, available at http://www.nasdaqtrader.com/trader.aspx?id=bx_pricing. As of Mar. 2023, Investors Exchange LLC ("IEX") and NYSE Chicago, Inc. ("NYSE Chicago") offer a flat pricing model. See IEX pricing schedule, available at https://www.iexexchange.io/resources/trading/fee-schedule#transaction-fees and NYSE

These exchanges offer members lower fees or higher rebates as the number of shares the member executes on the exchange reaches successively higher predefined volume-based levels ("tiers"). The transaction volume that qualifies a member for a better fee or rebate tier typically is measured as a fraction of total consolidated market volume, rather than a fixed value. Such tiers are commonly based on a member achieving a designated average daily volume on the exchange that equals or exceeds a certain percentage of total market volume in a given month (e.g., an average daily volume on the exchange that equals or exceeds 0.10% of the total consolidated market volume).[16] Each member's tier is calculated by the exchange as of the end of a month and reset thereafter on a monthly basis.[17] The large number of available tiers, and possible

Chicago pricing schedule, available at https://www.nyse.com/publicdocs/nyse/NYSE_Chicago_Fee_Schedule.pdf. As of Sept. 1, 2023, IEX began offering a rebate of $0.0004 per share on displayed orders that add liquidity for executions at or above $1. Another exchange, Long-Term Stock Exchange, Inc., ("LTSE") does not charge fees to transact. See https://ltse.com/trading/market-overview.

16 Tier criteria typically reference a member's average total daily traded share volume on the exchange during the month as a percentage of the average total daily market volume in stocks reported by one or more of the consolidated tapes ("Tapes") during the month pursuant to effective national market system plans that govern the collection, consolidation, processing, and dissemination of certain national market system information. See, e.g., Nasdaq pricing schedule, supra note 15. There currently are three such effective national market system plans. They are: (1) the Consolidated Tape Association Plan ("CTA Plan"); (2) the Consolidated Quotation Plan ("CQ Plan"); and (3) the Joint Self-Regulatory Organization Plan Governing the Collection, Consolidation, and Dissemination of Quotation and Transaction Information for Nasdaq-Listed Securities Traded on Exchanges on an Unlisted Trading Privileges Basis ("UTP Plan") (together, the "Equities Data Plans"). The Equities Data Plans disseminate SIP data over three separate networks: (1) Tape A for securities listed on NYSE; (2) Tape B for securities listed on exchanges other than NYSE and Nasdaq; and (3) Tape C for securities listed on Nasdaq. The CTA Plan governs the collection, consolidation, processing, and dissemination of last sale information for Tape A and Tape B securities. The CQ Plan governs the collection, consolidation, processing, and dissemination of quotation information for Tape A and Tape B securities. Finally, the UTP Plan governs the collection, consolidation, processing, and dissemination of last sale and quotation information for Tape C securities. See also Securities Exchange Act Release No. 98271 (Sept. 1, 2023), 88 FR 61630 (Sept. 7, 2023) (File No. 4-757) (Order directing the exchanges and the Financial Industry Regulatory Authority ("FINRA") to file a national market system plan regarding consolidated equity market data).

17 Currently, as exchanges assess transaction pricing to their members on a monthly basis in arrears, exchanges apply the highest tier a member achieves during a month to all of the member's executions during that month (e.g., if a member qualifies for Tier 2 in June (out of 4 tiers), all of its June volume will be assessed at the Tier 2 rate, including volume transacted at the lower Tiers 4 and 3 earlier in the month). Separately, the Commission has proposed to require exchanges to make the amounts of all fees and rebates determinable at the time of execution, which would require volume-based exchange transaction pricing to be applied prospectively rather than retroactively to the start of a month. See Securities Exchange Act

combinations of some tiers,[18] greatly complicate exchange pricing schedules and that complexity can make it more difficult for the public to understand and meaningfully comment on exchange pricing proposals.[19]

Volume-based exchange transaction pricing raises competitive concerns among exchange members as well as among exchanges. With respect to members competing for customers,[20] members with lower exchange volume do not qualify for the more favorable volume-based exchange transaction pricing tiers available to high-volume members. Accordingly, lower-volume members may find it difficult to compete for customer order flow because they are unable to pass through to customers the favorable exchange transaction pricing or lower commissions that are available to higher-volume members.[21] Similar competitive concerns also may be present for members as a result of volume-based exchange transaction pricing when they trade proprietarily using principal orders where no customers are involved.

Release No. 96494 (Dec. 14, 2022), 87 FR 80266, 80270 (Dec. 29, 2022) (File No. S7-30-22) ("Access Fee Proposal"). The Commission encourages commenters to review the Access Fee Proposal to determine whether it might affect their comments on this release. As exchanges compete to attract liquidity, frequent pricing changes (typically effective and/or operative on the first business day of a month) are common. See, e.g., id. at 87 FR at 80311 (stating that between Jan. 2018 and June 2022, market participants interacting with all exchanges had to adjust to an average of 155 fee changes per year across all exchanges).

18 See infra Table 2 (showing the number of available tiers at each exchange in March 2023, ranging from 0 to 93). Some exchanges offer additive incentives, including "step-up" rebates, that can be earned in addition to a standard tiered incentive. See, e.g., Cboe BZX Fee Schedule's Step-Up Tiers, available at https://www.cboe.com/us/equities/membership/fee_schedule/bzx/. See also infra Tables 1 and 2.

19 See Letter to Brent Fields, Secretary, Commission, from Rich Steiner, RBC Capital Markets (Oct. 16, 2018) ("RBC Letter") at 8 (comment letter on File No. S7-05-18) ("Our analysis identifies at least 1,023 pricing paths across the exchanges. Over one-third, or 381, of these paths consist of rebates. These 1,023 pricing paths are themselves determined by at least 3,762 pricing variables.").

20 A "customer" of a member is anyone using the services of the member to access the exchange, including another exchange member, a non-member broker-dealer, an institution, or any other person.

21 See Letter from Tyler Gellasch, President and CEO, Healthy Markets Association, to Gary Gensler, Chair, Commission, dated Nov. 16, 2022 at 4 ("Healthy Markets Letter"), available at https://healthymarkets.org/wp-content/uploads/2022/12/HMA-Ltr-re-Volume-Based-Pricing-11-16-22-1.pdf (stating that to "the extent that different competitors fall into different pricing tiers, it will directly impact the competitive balance between those firms"). The letter also includes suggestions for potential reforms to exchange routing incentives and transaction pricing fees. See id. at 4.

As a result of volume-based exchange transaction pricing, lower-volume members may seek to route some or all of their orders through high-volume members to qualify for better exchange pricing.[22] As that happens, the lower-volume members that are otherwise competing with the high-volume members become customers of their high-volume competitors. This dynamic can lead to order flow becoming increasingly concentrated among a small number of high-volume members, who then qualify for even higher tiers (i.e., tiers that feature lower fees or higher rebates) as a result of that flow, which further impacts the ability of lower-volume members to compete with them in a self-reinforcing cycle.[23] This concentration impacts customers by reducing the number of exchange members capable of offering them competitive exchange transaction pricing. Further, lower-volume exchange members provide a subsidy for the high-volume members when exchanges use the higher fees and lower rebates of the lower-volume members to fund the lower fees and higher rebates the exchange offers to high-volume members.[24] Accordingly, the Commission is concerned that volume-based exchange transaction pricing may have the effect of ensuring that high-volume members retain a persistent competitive advantage over lower-volume exchange members.[25]

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22 See, e.g., Securities Exchange Act Release No. 63241 (Nov. 3, 2010), 75 FR 69792 at 69793 (Nov. 15, 2010) ("Rule 15c3-5 Adopting Release") (discussing that certain market participants may find the wide range of access arrangements, including sponsored and/or direct market access, beneficial and that such arrangements may "reduce trading costs by lowering operational costs, commissions, and exchange fees").

23 See infra section IV.B.4 (The Market to Provide Exchange Access).

24 See id.

25 See 15 U.S.C. 78f(b)(4) (requiring that the rules of an exchange provide for the equitable allocation of reasonable dues, fees, and other charges among its members); (b)(5) (requiring that the rules of an exchange, among other things, not be designed to permit unfair discrimination); (b)(8) (requiring that the rules of an exchange not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Exchange Act); and 15 U.S.C. 78k-1(a)(1)(C) (finding it in the public interest and appropriate for the protection of investors and the maintenance of fair and orderly markets to assure fair competition among brokers and dealers, and among exchange markets).

In addition, volume-based transaction pricing tiers may provide incentives to members of more than one exchange to route orders to one particular exchange in order to qualify for that exchange's tiers and achieve lower fees and higher rebates as a result.[26] With respect to customer orders, an economic incentive to route customer orders to a particular exchange to achieve volume tiers on that specific exchange can present a conflict of interest between members and customers when members do not fully pass-through exchange transaction fees and rebates to their customers and instead retain for themselves the benefits of tiered exchange transaction pricing.[27]

Volume-based exchange transaction pricing also can impact competition among exchanges. For example, when a primary listing exchange bases pricing in its closing auction on the volume that a member executes on the exchange during regular trading hours, members that prefer (or whose customers prefer) the primary listing exchange's closing auction are incentivized to route orders to the exchange during the regular hours trading session in order to obtain more favorable pricing in the closing auction, which could negatively affect the ability of other exchanges to compete for that volume during regular trading hours.[28]

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26 Membership can overlap across the exchanges. For example, as of Feb. 21, 2023, MIAX Pearl Equities Exchange had 49 members and NYSE had 143 members. See https://www.miaxoptions.com/exchange-members/pearl-equities and https://www.nyse.com/markets/nyse/membership. Forty-two of those MIAX Pearl Equities Exchange's members were also members of NYSE.

27 The Commission understands that full pass-through of exchange transaction pricing by members to their customers is less common.

28 See, e.g., NYSE pricing schedule, supra note 15 (offering incremental per share discounts on market-at-the-close orders depending on a member's average daily trading volume that added liquidity to NYSE during the billing month as a percentage of CADV). According to NYSE, the proposed discounts were designed "to align incentives among both trading on the close and intraday trading on the Exchange." See Securities Exchange Act Release No. 94543 (Mar. 19, 2022), 87 FR 19544 at 19543 (Apr. 4, 2022). The NYSE further stated "that other marketplaces provide discounts based on intraday adding volume, and that aligning incentives for lower pricing at the close with additional intraday volume is thus neither novel nor an unreasonable stance in a competitive marketplace." Id. at 19546.

As discussed below, the proposed rule would prohibit exchanges from offering volume-based transaction fees, rebates, or other incentives in connection with the execution of agency or riskless principal orders in NMS stocks.[29] This prohibition is designed to remove a competitive impediment between higher-volume and lower-volume members when they compete for customer business, and also to mitigate the conflict of interest between members and customers presented by volume-based exchange transaction pricing tiers when members are routing customer orders to an exchange for execution. Because the prohibition in proposed Rule 6b-1 would be limited to agency and riskless principal orders, exchanges would continue to have the ability to provide tiered transaction pricing for member proprietary volume, and therefore this proposed prohibition does not seek to address any potential concerns associated with the routing of proprietary orders.

With respect to proprietary volume, the proposed rule would enhance transparency of tiered exchange transaction pricing for such volume by requiring exchanges to disclose the number of members that qualify for each of their pricing tiers. This information is intended to facilitate the Commission's review of proposed pricing changes and provide the public with additional relevant information for assessing and providing informed comment on exchange pricing proposals, including assessing exchange statements about the number of members that may qualify for a proposed tier, assessing the actual effect of a pricing change, and assessing whether a tier meets the applicable statutory standards.[30]

C. Commission Concerns

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[29] While the proposed rule addresses only NMS stocks, the Commission is requesting comment below on whether the proposal should be applied to options.

[30] See supra notes 8-10 and accompanying text (discussing the Exchange Act principles applicable to exchange pricing proposals).

As introduced above and further discussed below, the Commission has several concerns about volume-based exchange transaction pricing. First, the Commission is concerned about the impact of volume-based exchange transaction pricing, as tiered pricing has expanded and evolved, on competition among exchange members, such as when broker-dealers are competing for customers. Second, the Commission is concerned that the desire to qualify for volume-based transaction pricing tiers exacerbates a conflict of interest between members and their customers when members route customers' orders for execution because the member can economically benefit from its routing decision. Specifically, tiered transaction pricing exacerbates that conflict because the benefit to the member increases as the number of orders it executes on the exchange increases, and for the highest tier it meets during a month, the member receives that higher rebate or lower fee on all of its orders that it executed on that exchange during the month. Finally, the Commission is concerned that tiered pricing may impose a burden on exchange competition, especially when exchanges base pricing for an auction, trading session, or special program on volume submitted during regular trading hours outside that auction, trading session, or program.

As discussed above, the Commission is able to summarily temporarily suspend individual exchange proposed rule changes related to transaction pricing shortly after they are filed.[31] This post hoc filing-by-filing approach, however, does not address similar pricing across other exchanges. The Commission is proposing this rule as a cross-exchange approach intended to facilitate investor protection and the public interest while enhancing competition among members and among exchanges.

1. Competition Among Members

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[31] See supra note 6. See also 15 U.S.C. 78s(b)(3)(C).

Some exchange pricing schedules have evolved to the point of offering exceptionally specific pricing tiers, where some observers have questioned whether certain tiers may be available to only a limited number of members.[32] The Commission is concerned that exchanges' tiered transaction pricing may confer an inappropriate benefit on a small group of members to the detriment of other members by offering the best prices (i.e., the lowest fees and highest rebates) only to the exchange's highest volume members.[33] In turn, this advantage may significantly limit the ability of lower-volume members to compete with higher-volume members for the order flow volume necessary to reach higher tiers.

By design, volume-based exchange transaction pricing involves an exchange assessing different fees and offering different rebates and other incentives to different members for executions of orders with identical terms (symbol, price, size, side, order type, etc.). The range in fees and rebates can vary considerably, as shown below in Table 1. While the transaction price for each execution is small in absolute dollar terms, the percentage difference between what different members are assessed can be large, and the cumulative effect may quickly add up across the billions of shares executed each trading day. To show the range of individual tiered transaction fees that apply to different members engaged in the same activity, Table 1 shows the primary pricing model for each equities exchange and presents a general summary of the number

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32 See John Ramsay, Chief Market Policy Officer, IEX, Why Exchange Rebate Tiers are Anti-Competitive (June 5, 2023), available at https://www.iex.io/article/why-exchange-rebate-tiers-are-anti-competitive ("Ramsay Article") (stating that some "exchanges offer specialized 'bespoke' volume tiers with formulas that are so specific, they can appear to be specifically designed to benefit one or a few firms, and it is widely assumed that some are" (citation omitted) and that "tailored-tier rates seems to have the effect, if not the purpose, of allowing the highest-volume firms that already have a competitive edge to keep it"). See id. See also infra Table 2.

33 See supra note 26 and accompanying text. See also infra section IV.B.1.b, Volume-Based Pricing Tiers.

and dollar range of each exchange's basic volume-based transaction tiers applicable during regular trading hours.[34]

Table 1: Summary of Transaction-Based Pricing Schedules for Displayed/Regular Orders on Equities Exchanges During Regular Trading Hours as of Mar. 2023

Fees and Rebates for Transactions At or Above $1.00 on Tapes A, B & C*			
Exchange	**Pricing Model**	**Fees (# of Categories)**	**Rebates (# of Categories)**
Cboe BZX	Maker-Taker	$0.0030 (Tapes A, B & C – 1 each)	($0.0016) – ($0.0031) (Tapes A, B & C – 7 each)
Cboe BYX	Taker-Maker	$0.0012 - $0.0020 (Tapes A, B & C– 6 each)	($0.0002) – ($0.0015) (Tapes A, B & C – 2 each)
Cboe EDGA	Taker-Maker	$0.0015 - $0.0030 (Tapes A, B & C – 4 each)	($0.0016) – ($0.0022) (Tapes A, B & C – 3 each)
Cboe EDGX	Maker-Taker	$0.00275 - $0.0030 (Tapes A, B & C – 2 each)	($0.0016) – ($0.0029) (Tapes A, B & C – 4 each)
BX	Taker-Maker/Flat	$0.0012 - $0.0030 (Tapes A, B & C – 5 each)	($0.0004) – ($0.0018)** (Tapes A, B & C – 5 each)
Phlx (PSX)	Maker-Taker	$0.0030 (Tapes A, B & C – 1 each)	($0.0020) – ($0.0032) (Tapes A, B & C – 2 each)
Nasdaq	Maker-Taker	$0.0030 (Tapes A, B & C – 1 each)	($0.0013) – ($0.00305) (Tapes A, B & C – 11 each)
NYSE Arca	Maker-Taker	$0.0029 - $0.0030 (Tape A – 1, Tapes B & C – 2 each)	($0.0016) – ($0.0034) (Tape A – 7, Tapes B & C – 10 each)

34 The fees and rebates shown in Table 1 are derived from the exchanges' Mar. 2023 pricing schedules. See supra note 15. Table 1 shows only the generally available core pricing tiers, meaning it excludes fees and rebates applicable to special activities that may not apply to every member: orders not executed on the exchange (i.e., routed to an away exchange); executions resulting from an auction or specific order types (e.g., closing auctions or retail liquidity program order types or non-displayed order types); incentives for specific purposes (e.g., setting the best bid or offer price); registered market-maker incentives; non-rebate incentives; and cross-asset tiers (options versus equities). Table 1 also excludes fees and rebates tied to increased volume compared to a specific date because those additive rebates are not generally available pricing tiers. Moreover, the dollar ranges in Table 1 do not net together additive fees or rebates and count them as a separate tier (e.g., where a base rebate could be combined with a step-up additive rebate) because those are in addition to other tiers and the exchanges do not identify them as separate named tiers. Further, the number of categories is a count of those separately listed fees or rebates used in determining the range of an exchange's basic fees or rebates for purposes of Table 1.

NYSE American	Maker-Taker	\$0.0026 - \$0.0030 (Tapes A, B & C – 3 each)	(\$0.0020) – (\$0.0026) (Tapes A, B & C – 3 each)
NYSE	Maker-Taker	\$0.0026 - \$0.0030 (Tapes A & B – 1 each, Tape C – 3)	(\$0.0012) – (\$0.0031) (Tape A – 2, Tape B – 4 & Tape C – 5)
NYSE National	Taker-Maker	\$0.0020 - \$0.0029 (Tapes A, B & C – 5 each)	\$0.000 – (\$0.0030) (Tapes A, B & C – 5 each)
NYSE Chicago	Flat	\$0.0010 (Tapes A, B & C – 1 each)	\$0.00 (0)
IEX	Flat	\$0.0009 (Tapes A, B & C – 1 each)	\$0.000 (0)
MEMX	Maker-Taker	\$0.0029 - \$0.0030 (Tapes A, B & C – 3 each)	(\$0.0018) – (\$0.00335) (Tapes A, B & C – 5 each)
MIAX Pearl	Maker-Taker	\$0.00275 - \$0.00295 (Tapes A, B & C – 3 each)	(\$0.0029) – (\$0.0036) (Tapes A, B & C – 4 each)
LTSE	Free	\$0.0000 (0)	\$0.0000 (0)

[*]Table 1 reflects that, as of Mar. 2023, some exchanges apply fees and rebates according to the market data Tape on which a security is disseminated, which is based on the security's primary listing exchange. Tape A is for securities listed on NYSE, Tape B is for securities listed on exchanges other than NYSE and Nasdaq, and Tape C is for securities listed on Nasdaq.

[**]BX charges a \$0.0007 fee for Tapes A, B and C if a member fails to reach any liquidity removing rebate tier.

Volume-based exchange transaction pricing is more complicated and varied than what is presented in Table 1. For example, many exchanges also offer additional step-up tiers that increase the amount of rebates offered, as well as specific tiering programs for registered market-maker activity, selected order types that an exchange seeks to incentivize, or special programs like retail liquidity programs. Fees also may vary depending on whether an order is displayable or non-displayed or is executed in the opening or closing auction. To show the complexity of volume-based exchange transaction pricing, Table 2 identifies the number of volume-based pricing levels each exchange offers.[35]

35 Table 2 counts separately listed fee or rebate levels that are based on the achievement of a specified volume level and assessed on a per share basis. Additive rebates or other incentives were only counted once and

Table 2: Count of Transaction Pricing Levels That Are Based on Volume for Executions At or Above $1 as of Mar. 2023

Exchange	Volume-Based Pricing Levels
NYSE	93
Nasdaq	74
NYSE Arca	72
Cboe BZX	26
BX	20
Cboe EDGX	19
MEMX	13
Cboe BYX	11
NYSE National	11
NYSE American	10
Cboe EDGA	8
MIAX Pearl	8
Phlx (PSX)	4
IEX	0
LTSE	0
NYSE Chicago	0

Unless the terms of the pricing tier provide otherwise, a member's customer volume and its proprietary orders typically are combined for purposes of determining whether the member qualifies for a volume tier. Once a member attains a volume tier, the pricing advantage it receives from reaching that volume tier may turn into a competitive advantage in two ways.[36] First, the member can use the advantaged pricing it receives to benefit its proprietary trading

not added together and counted separately with each applicable base price. Different Tapes with differing fees or rebates were counted separately, but Tapes with the same fee or rebate were not counted separately. Different fees for separate order types that reference the same volume level were counted separately. Base fees and rebates that are not based on volume were not counted.

36 See Healthy Markets Letter, supra note 21, at 5-6 (stating that pricing tiers "offer cheaper trading for larger firms with greater order volumes [which] puts smaller firms at a competitive disadvantage on order and execution prices" and further stating that as a consequence, "several larger trading firms will then use their lower rates to attract greater order flow – consolidating order flow at the largest trading firms" and as "order flow has aggregated to the largest firms, this has increased their ability to garner for themselves even better rates; further expanding the gap between themselves and smaller firms").

business (i.e., it may pay lower fees or receive higher rebates on that business compared to other members that do not qualify for the favorable pricing tier). Second, the member may be able to attract additional order flow from customers because it can offer customers the same lower fees and higher rebates either directly through pass-through exchange transaction pricing or indirectly through lower commissions. This would allow the member to further increase and consolidate customer order flow, which in turn would help the member reach and maintain higher tiers. The gap in transaction pricing between base fees and rebates and top-tier fees and rebates can make it more difficult for new and lower-volume members to compete, putting both their proprietary and customer business at a competitive disadvantage.

Members at the best exchange pricing tiers can further widen the competitive gap by using their tiered pricing advantage to sell sponsored access[37] and direct market access[38] services to customers (including other member and non-member broker-dealers with whom they compete as well as any other customer that wants direct access to an exchange), through which the customer (including other broker-dealers) uses the sponsoring member's systems and connectivity to access an exchange. The sponsoring member benefits by being able to count the volume from its sponsored customers toward its own volume tiers, which can benefit the sponsored customers if they receive better pass-through pricing or lower commissions as a result, as well as the sponsoring member's proprietary trading business that also receives that better

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37 Sponsored access generally refers to an arrangement whereby a member permits a customer to route orders directly to an exchange using technology supplied by the customer that bypasses the member's trading system but not its market access checks. See Rule 15c3-5 Adopting Release, supra note 22, at 69793 (describing sponsored access as "referring to an arrangement whereby a broker-dealer permits customers to enter orders into a trading center that bypass the broker-dealer's trading system and are routed directly to a trading center . . . ").

38 Generally, direct market access refers to an arrangement whereby a member permits a customer to use its trading systems to send orders directly to a trading center. See id. at 69793 (describing direct market access as an "arrangement whereby a broker-dealer permits customers to enter orders into a trading center but such orders flow through the broker-dealer's trading systems prior to reaching the trading center").

transaction pricing.[39] In turn, if the sponsored customer receives pass-through pricing from the sponsoring member, the sponsored customer may be able to share in part of the sponsoring member's advantaged pricing (subject to the fees or mark-up it pays to the sponsoring member for the services), which can result in the sponsored customer paying lower exchange fees or earning higher exchange rebates than if it executed transactions on the exchange directly.[40] These private arrangements between a sponsoring member and its sponsored customer, however, work to further entrench the competitive advantage that exchange pricing tiers provide to high-volume members because, as the Commission understands, sponsoring members typically do not pass along the entirety of their transaction pricing advantage to their sponsored broker-dealer customers (thereby maintaining the sponsoring members' exchange transaction pricing advantage). As a result, the sponsoring members' broker-dealer customers depend on using the services of their competitors—the sponsoring members—to access any advantaged exchange transaction pricing their competitors are able to obtain through these access arrangements, which the sponsored broker-dealer customers could not obtain on their own. The extent to which any such pass-through transaction pricing is provided to sponsored customers is uncertain because these arrangements are not disclosed.[41]

2. Conflicts of Interest

With respect to agency brokerage activity, where the member transacts on an exchange for purposes of filling an order for another person, the Commission is concerned that volume-

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39 See, e.g., id. at 69793 n. 11 (stating that "[e]xchange members may use access arrangements as a means to aggregate order flow from multiple market participants under one MPID to achieve higher transaction volume and thereby qualify for more favorable pricing tiers").

40 See id. at 69793 (discussing, in part, how direct market access or sponsored access arrangements may help to reduce certain costs such as exchange fees). See also infra section IV.B.4.

41 See infra section IV.B.4.b.

based exchange transaction pricing exacerbates a conflict of interest between the member and its customer.[42] Specifically, when the member executes an agency order, it faces an economic incentive to route the order to one particular exchange over others to achieve volume tier requirements on that exchange that could result in reduced fees or increased rebates (and, in both cases, the member would retain some or all of the benefit for itself if it does not pass through that better exchange transaction pricing to its customer).[43]

While exchange fees and rebates in general may contribute to a conflict of interest between a member and its customer when routing orders, volume-based fees and rebates can exacerbate that conflict because they present an additional economic incentive to members when selecting an exchange for routing: the member's desire to reach volume tiers on an exchange to achieve preferential pricing. Specifically, volume-based pricing may incentivize members to route customer order flow to certain exchanges for the purpose of meeting tier qualification, which has the potential to be costly to customers if it comes at the expense of execution quality. Moreover, this incentive may be particularly enticing for members because customer volume can accrue towards the member's total volume level, giving it the ability to achieve more favorable tiered pricing for all of its order flow, including proprietary orders that the member sends to the exchange for its own account. The fact that volume-based exchange transaction pricing applies

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42 While some rules may seek to address conflicts of interest in the context of agency brokerage activity, this proposal seeks to mitigate the conflict specific to volume-based exchange transaction pricing at its source through the proposed prohibition. See, e.g., Securities Exchange Act Release No. 96496 (Dec. 14, 2022), 88 FR 5440 (Jan. 27, 2023) ("Regulation Best Execution Proposing Release"). The Commission encourages commenters to review the Regulation Best Execution Proposing Release to determine whether it might affect their comments on this release.

43 Customers could benefit from exchange tiered pricing if members pass some or all of the savings through to the customers either directly or in the form of lower commissions or other subsidies. See also Access Fee Proposal, supra note 17 (proposing, among other things, revisions to the access fee cap in 17 CFR 242.610 (Rule 610 of Regulation NMS)). The Commission encourages commenters to review the Access Fee Proposal to determine whether it might affect their comments on this release.

to both agency-related and proprietary order flow even further exacerbates the conflict of interest between a member and its customer because the routing decisions a member makes with respect to its agency-related order flow can also benefit its unrelated proprietary business. Finally, it may be challenging for customers to understand and assess the impact that tiered exchange pricing may have on broker-dealer routing decisions due to the complexity of the exchanges' tiered pricing schedules, which makes it difficult for customers to provide a check against any conflicts of interest.[44] Accordingly, the economic incentive presented by tiered exchange transaction pricing may affect members' order routing decisions, exacerbating a conflict of interest that can potentially harm investors with inferior executions when members route customer orders to exchanges.[45]

3. Exchange Competition

An exchange's volume-based transaction pricing schedule is designed to entice members to route orders to that exchange over other exchanges by lowering fees or increasing rebates as volume-based transaction tiers are met. Pricing tiers that are based on total consolidated volume may create additional incentives for members to route to certain exchanges, particularly towards the end of each month as members seek to achieve tier targets to qualify for a better pricing tier

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44 See Healthy Markets Letter, supra note 21, at 4 ("The inherent conflict of interest created by different pricing tiers may also impact how brokers treat their own customers in a way that isn't quite as transparent as simply chasing the higher rebate or lower fee venue. For example, a broker with a less-sophisticated customer may send orders to a venue so that the firm would reach a certain tier threshold, despite the broker's awareness that executions on that venue may result in inferior execution outcomes to investors. However, the same broker, if faced with the same order from a more-sophisticated customer, may not."). See also Recommendation of the SEC Investor Advisory Committee Regarding Exchange Rebate Tier Disclosure (Jan. 24, 2020), available at https://www.sec.gov/spotlight/investor-advisory-committee-2012/exchange-rebate-tier-disclosure.pdf. In the recommendation, the Investor Advisory Committee stated that "[t]he lack of public disclosure concerning the structure of rebates for executing brokers" exacerbates "a principle-agency conflict in the receipt of rebates for orders executed on behalf of clients but not shared with clients."

45 See infra section IV.B.3.

on that exchange. This dynamic may harm the ability of other exchanges to compete for order flow during that time.

Further, certain forms of exchange transaction pricing tiers can raise unique issues and concerns. For example, if a primary listing exchange for a stock were to base its closing auction pricing on the volume a member executes during regular trading hours outside of the auction, members that send customer orders in that stock to the primary listing exchange's closing auction may be incentivized to also route to the exchange during regular hours to qualify for tiered pricing in the closing auction.[46] In this scenario, the exchange is leveraging its role as the primary listing exchange for a stock, in addition to the closing auction it provides for that stock, to use members' desire to achieve tiered pricing in the closing auction as an incentive for those members to also route to the exchange during the regular trading session.

Accordingly, the Commission is concerned about the potential for exchanges to use some forms of volume-based exchange transaction pricing to insulate certain portions of member volume from competition while at the same time over-emphasizing competition based on fee tiering, which can constrain innovation among exchanges in other areas and impose a burden on competition among exchanges that may be inconsistent with the goals of a national market system.

II. Description of Proposed Rule

A. Overview of Proposed Rule

The Commission is proposing a rule designed to address its specific concerns with volume-based exchange transaction pricing schedules.[47] Proposed Rule 6b-1 has three

46 See also infra section IV.B.1.c.

47 The proposed rule would provide a consistent approach to these issues, which the Commission could not achieve through piecemeal suspensions of individual exchange pricing filings.

components. First, the proposed rule would prohibit equities exchanges from offering volume-based exchange transaction pricing in connection with the execution of agency or riskless principal orders in NMS stocks ("agency-related volume").[48] The proposed rule would not prohibit exchanges from offering volume-based exchange transaction pricing for member proprietary volume where the member is trading solely for its own account and not in connection with filling an order for a customer.[49]

Second, the proposed rule contains an anti-evasion clause that would require equities exchanges that have volume-based transaction pricing for member proprietary volume to adopt rules to require members to engage in practices that facilitate the exchange's ability to comply with the prohibition on volume-based exchange transaction pricing in connection with the execution of agency-related volume.[50] The proposed rule also would require exchanges to establish, maintain, and enforce written policies and procedures that are reasonably designed to detect and deter members from receiving volume-based exchange transaction pricing in connection with the execution of agency or riskless principal orders in NMS stocks.[51] This

48 See proposed Rule 6b-1(a).

49 See infra section IV.E.1 and 2 (proposing alternatives that would prohibit exchanges from offering volume-based exchange transaction pricing for member proprietary volume).

50 See proposed Rule 6b-1(b)(1). Exchanges would have flexibility under the proposed rule as to what rules to adopt. For example, an exchange may allow members to designate that certain of their ports or sessions handle exclusively agency-related orders or exclusively proprietary orders as a means to facilitate the exchange's ability to comply with the prohibition. If the member does not use separate ports in that manner, the exchange could require members to indicate for billing purposes which orders are agency-related and ineligible for tiered pricing if the exchange does not already have a mechanism to distinguish those orders. Or, if a member does not conduct an agency business and only trades proprietarily or does not trade proprietarily and only trades on an agency basis, an exchange may not need to require anything additional from that member for purposes of this proposed rule.

51 See proposed Rule 6b-1(b)(2). For example, if an exchange allows members to designate that certain of their ports or sessions handle exclusively agency-related orders or exclusively proprietary orders as a means to facilitate the exchange's ability to comply with the prohibition, an exchange might adopt a policy and procedure to review the ports and sessions designated by members to make sure that members are not, for example, submitting agency-related orders though a port or session the member has designated as solely for proprietary orders.

requirement would help to promote an exchange's compliance with the proposed rule by ensuring that an exchange develops mechanisms that would prevent its members from inappropriately receiving volume-based exchange transaction pricing for agency-related orders.[52]

Third, the proposed rule would require equities exchanges that have volume-based transaction pricing for member proprietary volume to submit electronically to the Commission disclosures of the number of members that qualify for their volume-based transaction pricing.[53] Specifically, such exchanges would be required to submit electronic, machine-readable structured data tables of their volume-based transaction pricing tiers and the number of members that qualify for each tier in an Interactive Data File in accordance with 17 CFR 232.405 (Rule 405 of Regulation S-T),[54] and the public would be able to access those disclosures through the Commission's EDGAR system.[55] Additional public transparency regarding the number of members that qualify for each pricing tier for their proprietary volume would help the Commission, members, and the public understand how the benefits of volume-based pricing are distributed and the potential impact on members, which should facilitate and inform members', the public's, and other exchanges' efforts to submit comment letters on volume-based exchange

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52 See, e.g., section 6(b)(1) of the Exchange Act, 15 U.S.C. 78f(b)(1) (requiring an exchange to be so organized and have the capacity "to be able to carry out the purposes of [the Exchange Act] and to comply, and . . . to enforce compliance by its members and persons associated with its members with the provisions of [the Exchange Act], the rules and regulations thereunder, and the rules of the exchange").

53 See proposed Rule 6b-1(c). Consistent with the proposed disclosure requirement, the Commission also is proposing to amend 17 CFR 232.101 (Rule 101 of Regulation S-T) to add the disclosure required under proposed Rule 6b-1(c) as a filing that must be submitted electronically.

54 See proposed 17 CFR 232.405(b)(6). Rule 405 of Regulation S-T applies to the submission of Interactive Data Files. The Commission is proposing conforming changes in Rule 405 of Regulation S-T to reflect the inclusion of proposed Rule 6b-1(c). Such files must be submitted using Inline XBRL. See proposed 17 CFR 232.405(a)(3). The Commission also is proposing conforming changes to Rule 101 of Regulation S-T to reflect the inclusion of proposed Rule 6b-1. See proposed 17 CFR 232.101.

55 As discussed below in section II.D, Request for Comments, the Commission is soliciting comment on other potential metrics for the disclosures, including the volume of shares at each tier and the dollar amount of fees, rebates, or other incentives at each tier.

transaction pricing proposals to further inform the Commission as it considers those proposals. For example, information on the number of members that have qualified for a newly adopted pricing tier would allow the Commission and interested parties to assess exchange statements regarding the number of members that the exchange estimated should qualify for a proposed new tier or amended tier. In addition, such information would provide a data point for the Commission to consider in determining whether a proposed tier meets the applicable statutory standards and whether the Commission should temporarily suspend the newly adopted pricing tier.

B. Prohibition on Volume-Based Exchange Transaction Pricing for Agency-Related Volume

The Commission is concerned about the impact of exchange tiered transaction pricing on competition among an exchange's members. As discussed above, volume-based exchange transaction pricing can frustrate and impede the ability of new and lower-volume members to compete with high-volume members, including for customer order flow, which can reduce the number of members that are able to offer customers the highest-tiers of exchange transaction pricing.[56] For example, if a member that qualifies for the best pricing tier can offer a customer pass-through of its $0.0015 take fee for executing on Exchange A, but a member that does not qualify for a tier can only offer a customer pass-through of its $0.0030 take fee on that same exchange for execution of the same customer order, the lower-volume member faces a distinct and measurable disadvantage even though both are members of Exchange A. The Commission also is concerned that volume-based exchange transaction pricing that applies to agency-related

56 See supra sections I.B (Volume-Based Exchange Transaction Pricing), and I.C.1 (Competition Among Members).

volume exacerbates a conflict of interest between members and their customers when members face an economic incentive to earn increasingly lower fees or higher rebates or other incentives from an exchange in connection with the execution of more customer orders on that exchange.[57]

Accordingly, to address the Commission's concerns with member competition, as well as the conflict of interest between members and their customers, the prohibition on volume-based exchange transaction pricing in proposed Rule 6b-1(a) would apply to agency-related volume. Specifically, the proposed rule would prohibit exchanges from offering volume-based transaction fees, rebates, or other incentives in connection with the execution of agency or riskless principal orders in NMS stocks.[58]

The proposed prohibition would apply broadly to all executions where a member is executing an agency or riskless principal order in an NMS stock for the purpose of filling a customer order and is not trading for its own account. For purposes of the proposed rule, customers could include, for example, other members, non-member broker-dealers, institutions, an affiliate of the member, natural persons, or any person that uses the member to access an exchange, including through direct market access or sponsored access services.

The proposed rule would define riskless principal to mean "a transaction in which, after having received an order to buy from a customer, the broker or dealer purchased the security from another person to offset a contemporaneous sale to such customer or, after having received an order to sell from a customer, the broker or dealer sold the security to another person to offset

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57 See supra section I.C.2 (Conflicts of Interest).

58 To comply with the prohibition, an exchange that offers volume-based transaction fees, rebates, or other incentives in connection with the execution of agency or riskless principal orders in NMS stocks would need to file a proposed rule change on Form 19b-4 to remove any such pricing from its pricing schedule.

a contemporaneous purchase from such customer." That definition is consistent with other Commission definitions of the term.[59]

Like agency orders, riskless principal orders are one way for a member to fill a customer's order. Riskless principal orders involve contemporaneous buys and sells that are "riskless" to the member, in that the member does not take on the market risk of price moves in the stock because it buys or sells to promptly transfer the position to a customer rather than retain the position for any significant length of time in its own account.

Some rules, in contexts other than exchange transaction pricing, include definitions of the term "riskless principal" that require the price of both legs of the riskless principal trade be at the

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59 See, e.g., 17 CFR 240.3a5-1(b) (exempting banks from the definition of "dealer" under the Exchange Act when acting in a riskless principal capacity when certain conditions are met, which states that "[f]or purposes of this section, the term riskless principal transaction means a transaction in which, after having received an order to buy from a customer, the bank purchased the security from another person to offset a contemporaneous sale to such customer or, after having received an order to sell from a customer, the bank sold the security to another person to offset a contemporaneous purchase from such customer."); 17 CFR 240.3a5-2 (exemption from the definition of "dealer" for banks effecting transactions in securities issued pursuant to Regulation S); 17 CFR 255.6(c)(2) (other permitted proprietary trading activities); 17 CFR 240.31(a)(14) (Section 31 transaction fees); 17 CFR 230.144A(a)(5) (private resales of securities to institutions); and 17 CFR 230.144 (persons deemed not to be engaged in a distribution and therefore not underwriters) (defining the term "riskless principal transaction" generally without reference to price, but further providing in 17 CFR 230.144(f)(1)(iii) the possible manners of sale, one of which is a riskless principal transaction where the offsetting trades are executed at the same price). Generally, the exchanges use the terms "agency" and "riskless principal" in their rules without defining them because the terms are widely and commonly understood. For example, Cboe BZX refers to the terms "agency" and "riskless principal" 12 times each in its rulebook (covering equities and options rules), but does not separately define either term, except with respect to retail orders under its Retail Order Attribution Program. See Cboe BZX Rule 11.25(a)(2) (retail order attribution program, referring to a "riskless principal order that meets the criteria of FINRA Rule 5320.03"). Moreover, each of the exchange rules that implement the Consolidated Audit Trail, which requires the capture of the capacity of the member executing the order, whether principal, agency, or riskless principal, uses those terms in an identical manner without defining them. See, e.g., Nasdaq General 7, Section 3(a)(1)(E)(iv); BZX Rule 4.7(a)(1)(E)(iv). See also Limited Liability Company Agreement of Consolidated Audit Trail, LLC, Article VI, Section 6.3(d)(v)(D). Those terms also are not defined within the CAT NMS Plan.

same price.[60] In addition, FINRA has a definition of riskless principal that specifies that the member's principal trade and the customer fill occur at the "same price."[61]

The definition of riskless principal in proposed Rule 6b-1 does not require the principal leg and customer leg to occur at the same price. Proposed Rule 6b-1 uses a broader definition of riskless principal to achieve the purposes of the proposed rule and to limit the ability of members to easily circumvent the proposed rule's prohibition by an economically insignificant amount. For example, if the proposed rule contained a "same price" requirement in the definition of riskless principal, a member might attempt to circumvent the prohibition by providing an economically insignificant different price on the customer leg—one that varied by the smallest fraction of a penny possible--to avoid classifying the transaction as "riskless principal." If proposed Rule 6b-1 excluded such a transaction from its definition of riskless principal, the member would qualify for volume-based exchange transaction pricing on the principal leg of the transaction even though the transaction had the defining characteristics of a riskless principal trade because the member did not take on the market risk of price moves in the stock and promptly transferred the position to the customer. A definition that includes the concept of "same price" therefore would not achieve the Commission's goals of prohibiting volume-based exchange transaction pricing for agency-related volume.

Because orders executed in the capacity of agent and riskless principal both are done to fill a customer order, the conflict of interest exacerbated by exchange tiered transaction pricing is

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60 See, e.g., 17 CFR 242.201(a)(8) (concerning "short exempt" order marking for certain riskless principal orders) and 17 CFR 240.10b-18 (purchases of certain equity securities by the issuer and others).

61 See, e.g., FINRA Rule 5320.03 (excluding riskless principal transactions from FINRA's Prohibition Against Trading Ahead of Customer Orders) and FINRA Rule 6380B(d)(3)(B) (concerning reporting to the FINRA/NYSE Trade Reporting Facility). The FINRA rule prohibiting trading ahead of customer orders generally prohibits members from trading for their own account at a price that would satisfy the customer order, subject to an exception for riskless principal orders. Exchanges have incorporated FINRA's rule by reference or have adopted similar rules. See, e.g., FINRA Rule 5320.03 and BZX Rule 12.6.03.

equally present for both: the member faces conflicting economic incentives when choosing the exchange execution venue, and the customer bears any costs associated with an execution that results from that decision. The Commission therefore proposes to treat riskless principal orders the same as agency orders for purposes of proposed Rule 6b-1(a).

Finally, because proposed Rule 6b-1(a) would prohibit exchanges from offering volume-based transaction pricing in connection with the execution of agency or riskless principal orders in NMS stocks, which represent a member's agency-related volume, it would prohibit exchanges from counting that agency-related volume towards any volume-based transaction tiers applicable to the member's proprietary volume. For example, if a member is engaged in proprietary trading (e.g., as a registered market maker on the exchange) and also has a separate division or affiliate that is engaged in a customer brokerage business (e.g., as an executing broker for non-member brokers), an exchange could not count the member's agency-related volume towards any volume-based transaction tiers the member qualifies for on its proprietary volume. Similarly, because the proposal would prohibit volume-based exchange transaction pricing in connection with the execution of agency or riskless principal orders in NMS stocks, it would prohibit exchanges from basing transaction pricing in an auction on agency-related volume executed within or outside the auction. In either case, an exchange could count only the member's proprietary volume to determine the pricing tier for the member's proprietary trades.

Prohibiting volume-based exchange transaction pricing for agency-related orders is intended to promote competition among members for customer business. It also is intended to mitigate the conflict of interest between members and customers that is exacerbated by exchange tiered pricing where the member economically benefits from its choice of exchange execution venue for customer orders. The proposed rule would eliminate one incentive—reaching a volume tier—for a member to route a customer order to a particular exchange when doing so might not be in the customer's interest.

Request for Comments

The Commission generally requests comment from the public on all aspects of proposed Rule 6b-1(a), including its objectives and its terms to achieve those objectives. More specific requests for comment are set forth below. As much as possible, commenters are requested to provide empirical data in support of any arguments or analyses and to offer explanations for their views.

1. Do commenters believe that volume-based exchange transaction pricing impacts competition among members when competing for customers on an agency basis? Do sponsored access and direct market access arrangements contribute to these competitive effects when exchange members compete for customers? Why or why not? Does volume-based exchange transaction pricing impact competition among members when trading proprietarily? If there is an impact, is the impact greater for members when they are competing for customers or when they are trading proprietarily, or is the impact equivalent?
2. Do commenters believe that volume-based exchange transaction pricing exacerbates the conflict of interest between members and customers when members are routing customer orders, because of the member's desire to qualify for volume-based transaction tiers? Would complete pass through of exchange pricing to the member's customer eliminate that conflict? Why or why not? To what extent do members completely or partially pass through all exchange pricing to their customer? Do customers prefer pass through exchange transaction pricing or broker commissions, and for what reasons? Is the

Commission's understanding correct that full and partial pass-through of exchange transaction pricing by members to their customers is less common? For sponsored access and direct market access arrangements, how common is pass-through of exchange transaction fees? What types of pass-through arrangements are most common and how much does the sponsoring member typically retain as compensation?

3. To what extent does volume-based exchange transaction pricing impact competition among exchanges, and/or between exchanges and off-exchange venues, such as alternative trading systems ("ATSs") and wholesaler broker-dealers?
4. To what extent is volume-based exchange transaction pricing used by exchanges to attract specific types of members or customers of members, such as proprietary traders, registered market makers, or agency customers? Among agency customers, are any particular types of customers particularly attracted by volume-based exchange transaction pricing, such as long-term investors, short-term traders, investment advisers, and institutional investors?
5. To what extent is the ability of an exchange to attract order flow from specific types of members or customers through volume-based exchange transaction pricing or other forms of targeted pricing necessary to support competition between exchanges and off-exchange venues? For example, if exchanges lack the ability to offer such pricing on agency-related order flow, could that potentially make off-exchange venues relatively more attractive as a destination for that flow? If so, should the Commission address such a competitive disparity? For example, should the Commission expand the scope of the prohibition on volume-based transaction pricing for agency-related volume in certain stocks to off-exchange venues such as ATSs?

6. How consistently do individual exchange members hit specific tiers over time? How do members respond to volume-based exchange transaction pricing changes and how do those member responses differ across different exchanges?
7. How does using volume-based exchange transaction pricing as a means of compensating liquidity providers compare to other fee and non-fee methods of attracting those liquidity providers? Do exchange-registered market makers react differently from other members that provide liquidity to exchange transaction pricing? Does volume-based exchange transaction pricing affect liquidity taking orders differently from liquidity providing orders?
8. Would the proposed prohibition on volume-based exchange transaction pricing in connection with the execution of agency or riskless principal orders in NMS stocks address the concerns the Commission identified about member competition and conflicts of interests between members and customers? Why or why not?
9. Is the proposed definition of riskless principal in proposed Rule 6b-1(a) appropriate? Why or why not? If the definition included a "same price" requirement, do commenters agree that the Commission would not be able to achieve its objectives for the proposed rule? Why or why not?
10. Do exchanges have rules and policies and procedures in place that require members to mark their orders for transaction billing purposes in a manner that would readily allow exchanges to comply with the proposed prohibition, or would those rules and policies and procedures need to be revised to accommodate the proposed prohibition?
11. Should the Commission also prohibit volume-based exchange transaction pricing for member proprietary volume (i.e., should the Commission prohibit exchanges from

offering volume-based transaction pricing for all volume in NMS stocks)?[62] Why or why not? Would doing so obviate the need for the anti-evasion provisions in proposed Rule 6b-1(b) and the proposed disclosures in proposed Rule 6b-1(c) since tiered pricing would no longer be permitted? Would a broader prohibition that includes both agency-related and proprietary orders address the Commission's concerns, discussed above in section I.C, about competition among members and competition among exchanges, as well as the conflict of interest between members and customers with respect to agency-related order flow? How would a broader prohibition affect exchange fees and rebates compared to what they offer today? Would exchanges be able to extend their best fee and rebate pricing to all members? Why or why not? If not, and if the purpose of tiered transaction pricing is to attract more order flow from members, why would exchanges not be able to offer the best pricing to all members to attract the greatest possible volume?

12. If the Commission extends the prohibition on volume-based exchange transaction pricing to member proprietary volume, should displayed liquidity-adding orders from an exchange's registered market makers in their registered or appointed symbols not be subject to the prohibition in order to provide exchanges with a means to incentivize displayed quotes from their registered market makers? In other words, should the Commission prohibit exchanges from offering volume-based transaction pricing for all volume in NMS stocks, but subject to a carve-out only for displayed liquidity providing orders from exchange registered market makers in their registered or appointed symbols?[63] Should such an exception be limited to registered exchange market makers

62 See infra section IV.E.1.

63 See infra section IV.E.2.

that are subject to minimum quantitative and qualitative quotation requirements that meet or exceed the highest such standards in place among national securities exchanges to avoid conferring a benefit without meaningful corresponding obligations that protect investors? Would continuing to allow volume-based exchange transaction pricing for displayed liquidity-adding orders from such exchange registered market-makers in their registered or appointed symbols be an appropriate benefit to encourage members to become and remain registered market makers and to provide publicly displayed quotes, consistent with their quoting obligations? Would tiered pricing encourage greater quoted depth or narrower quoted spreads, or both, for displayed quotes? If the Commission adopted a broader prohibition on volume-based transaction pricing with a carve-out for registered market makers, would the anti-evasion provisions in proposed Rule 6b-1(b) and the transparency disclosures in proposed Rule 6b-1(c) be less relevant in circumstances where the only reportable activity would be the activity of registered market makers who are subject to exchange market making rules?

13. Instead of prohibiting volume-based exchange transaction pricing, should the Commission instead allow exchanges to offer volume-based pricing to attract order flow, but require the volume tiers to be based on total aggregate volume submitted to the exchange, with the associated tiered pricing applied to all members uniformly? For example, an exchange could establish a volume-based pricing tier that considers cumulative exchange-level liquidity-adding activity, where all liquidity-adding volume executions from all members is combined to count towards the tier, and, after a tier threshold is reached, the enhanced rebate would be available to all members equally. Would this alternative address the Commission's concerns regarding competition among

members? Would it impose a burden on competition among exchanges and a conflict of interest between members and customers when routing customer orders because of the incentives to reach tiers? Would that burden and conflict be greater than, or less than, under the current tiering structure? Would this alternative obviate the need for the anti-evasion provisions in proposed Rule 6b-1(b) and the transparency disclosures in proposed Rule 6b-1(c)?

14. If exchanges continue to offer volume-based transaction pricing for member proprietary orders, should the Commission prohibit an exchange from basing tiers on total consolidated volume ("TCV"), or another metric that is based on volume transacted on other exchanges and off-exchange, and instead limit volume-based transaction tiers to volume that occurs solely on the exchange as a means of promoting competition among exchanges? Do tiers based on TCV constrain competition among exchanges by seeking primarily to preserve relative exchange market share? Why or why not? Even if tiers were not permitted to be based on TCV, could exchanges effectively circumvent such a prohibition by replicating a similar approach using absolute numbers and updating them on a monthly basis based on future estimates of total consolidated market volume? Why or why not?

15. If exchanges continue to offer volume-based transaction pricing for member proprietary orders, should the Commission prohibit exchanges from basing tiers in an auction, trading session, or special program or order types (e.g., retail liquidity program) on volume done outside that auction, trading session, or program or order type? For example, should the Commission prohibit exchanges from basing tiers in the closing auction on volume transacted during regular trading hours in order to prevent an

exchange from leveraging its closing auction in a manner that harms the ability of other exchanges to compete with it in the regular hours trading session? Do these types of arrangements impact competition among exchanges and among members? Why or why not?

16. Should the Commission prohibit volume-based exchange transaction pricing for agency-related orders also for listed options? Why or why not? Would extending the prohibition to listed options implicate the same costs and benefits that would apply to a prohibition on volume-based exchange transaction pricing for NMS stocks, or are there unique aspects of the listed options markets that would apply different costs or result in different benefits? What would those differences be?

17. If the Commission also prohibits volume-based exchange transaction pricing for member proprietary volume in NMS stocks, should listed options also be included within the broader prohibition? If the Commission were to adopt a broader prohibition on all volume-based exchange transaction pricing and apply it to all NMS securities (including NMS stocks and listed options), should it carve-out displayed liquidity-adding orders from an exchange's registered market makers in their assigned options classes and series from such a prohibition? Should there be any particular minimum quantitative and qualitative quoting requirements to qualify for the carve-out? Would such a carve-out for listed options be an appropriate benefit to encourage members to become and remain registered market makers and undertake registered market making obligations in the same way that it would for NMS stocks? Does tiered pricing encourage greater quoted depth or narrower quoted spreads, or both, for listed options in a similar manner to NMS stocks? If the Commission were to allow exchanges to offer volume-based transaction

pricing but require that tiers be aggregated across all members and the associated pricing be applicable to all members uniformly, should that condition apply to listed options as well as NMS stocks?

18. Instead of prohibiting volume-based exchange transaction pricing for agency and riskless principal orders, should the Commission instead prohibit exchanges from offering tiers that are reasonably achievable by only one or a few members based on those members' order flow? Why or why not? If such a prohibition were adopted, would it be appropriate, for example, to prohibit tiers for which fewer than 50% of an exchange's members could have met the tier criteria during the prior month? Would assuring that exchanges set tier criteria at levels for which at least 50% of the exchange's members are capable of meeting based on order flow they route help assure that such tiered pricing meets the applicable statutory standards because at least a majority of members would be eligible to receive it? Would such a prohibition increase competition among members for customers while providing exchanges with the ability to offer tiered pricing at levels that incentivize members to contribute additional liquidity to the exchange? Alternatively, would it be appropriate, for example, to prohibit tiers for which only one, two, three, or four members are capable of qualifying to prevent tiers that are only achievable by only a few members and help assure that tiers meet the applicable statutory standards? Should any of the above prohibitions also be applied to proprietary orders for the account of a member? Why or why not? Should such a prohibition also apply to listed options? Why or why not?

C. Anti-Evasion

The prohibition in proposed Rule 6b-1(a) is intended in part to address the conflict of interest between members and customers that is exacerbated by volume-based exchange transaction pricing schedules when members route customer orders to an exchange, as well as address burdens on competition that volume-based exchange transaction pricing can impose on members competing for customer business. In light of the combination of these conflicts and potential competitive advantages, the Commission is concerned that members may have a financial incentive to mischaracterize their agency-related orders to continue to qualify for volume-based pricing.

To mitigate this incentive to mischaracterize order capacities, proposed Rule 6b-1(b)(1) would require an equities exchange that offers volume-based transaction pricing for member proprietary orders to have a rule to require its members to engage in practices that facilitate the exchange's ability to comply with the prohibition on volume-based exchange transaction pricing in connection with the execution of agency-related volume.[64] The proposed rule would provide exchanges with flexibility to adopt a rule that is tailored to its needs, systems, and members. For example, an exchange rule could require members to identify, for transaction pricing and billing purposes, their proprietary orders for their own account and submit or mark them in a distinct manner from all other orders. Similarly, an exchange could adopt or enhance any existing rule that requires members to properly label orders or identify which types of orders are submitted through specific ports or sessions to ensure the accuracy of order marking and ensure that members do not mislabel or misdirect orders specifically for transaction billing purposes.[65]

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64 If an exchange does not offer volume-based transaction pricing, then it would not be required to adopt such a rule.

65 Many exchanges already have rules requiring members to accurately mark their orders. See, e.g., Nasdaq General 3, Rule 1032(a)(6) (requiring members to "input [] accurate information into the System….").

Proposed Rule 6b-1(b)(1) would support proposed Rule 6b-1(a)'s prohibition on volume-based transaction fees, rebates, or other incentives in connection with the execution of agency or riskless principal orders in NMS stocks.

Second, proposed Rule 6b-1(b)(2) would require the exchange to establish, maintain, and enforce written policies and procedures reasonably designed to detect and deter members from receiving volume-based pricing in connection with the execution of agency-related volume. While exchanges generally already establish, maintain, and enforce written policies to detect and deter non-compliance with their rules and the Federal securities laws and rules to ensure compliance with their obligations under the Exchange Act,[66] the Commission is adding a specific and complementary requirement in proposed Rule 6b-1 to help ensure exchange compliance with the proposed rule. Proposed Rule 6b-1(a) would apply specifically to exchange pricing schedules and how exchanges assess and collect fees and offer rebates and other incentives to members. For example, exchanges could develop written policies and procedures to audit member activity to ensure the proper marking of orders and review trading records to ensure that the exchange is not unintentionally offering tiered transaction pricing on agency-related volume. Proposed Rule 6b-1(b)(2) would complement existing exchange rules requiring the accurate marking of orders and thereby facilitate the ability of exchanges to comply with proposed Rule 6b-1(a).

Request for Comments

The Commission generally requests comment from the public on all aspects of proposed Rule 6b-1(b), including its objectives and its terms to achieve those objectives. More specific requests for comment are set forth below. As much as possible, commenters are requested to

[66] See, e.g., 15 U.S.C. 78s(g)(1).

provide empirical data in support of any arguments or analyses and to offer explanations for their views.

19. Is the anti-evasion clause in proposed Rule 6b-1(b) appropriately designed to ensure exchange compliance with the proposed prohibition on volume-based exchange transaction pricing in connection with the execution of agency or riskless principal orders? Why or why not? To what extent are practices or systems already in place that could facilitate members accurately marking orders so that exchanges can distinguish proprietary and agency orders for transaction billing purposes?

D. Transparency for Volume-Based Pricing on Member Proprietary Orders

Proposed Rule 6b-1(c) would add a new public disclosure requirement for exchanges that offer volume-based transaction pricing in connection with the execution of proprietary orders in NMS stocks for the account of a member.[67] For purposes of proposed Rule 6b-1(c), proprietary orders are those where the member is trading solely for its own account and not in connection with filling an order for a customer. Proprietary orders are principal capacity orders and are not agency or riskless principal capacity orders.

Disclosing information about the manner in which an exchange's tiered transaction pricing applies across its membership would enhance public transparency regarding the application of an exchange's tiered pricing structure for member proprietary volume. In turn, the increased transparency would enhance the ability of members, other exchanges, and the public in considering and commenting on whether proposed volume-based pricing changes applicable to member proprietary volume provide for the "equitable allocation of reasonable dues, fees, and

[67] Exchanges that do not offer any volume-based transaction pricing would not be required to submit the disclosures required under proposed Rule 6b-1(c).

other charges"[68] that are "not designed to permit unfair discrimination" between broker-dealers[69] and that do not "impose any burden on competition not necessary or appropriate in furtherance of the purposes"[70] of the Exchange Act. For example, monthly disclosures would provide timely information during the 60 day suspension period of an exchange's proposed pricing change that would allow the public to see the impact of a new or revised pricing tier during the first month it was in effect. The Commission and the public could use that information to assess exchange statements about the number of members that the exchange expected to qualify for a proposed tier, and commenters could use that information to provide comment as to whether a tier change meets the applicable statutory standards.

The Commission also believes that the public disclosure of such information would be consistent with section 11A of the Exchange Act in that it could assist in assuring "fair competition among brokers and dealers, [and] among exchange markets" and "the practicability of brokers executing investors' orders in the best market."[71] For example, the proposed disclosures would allow interested parties to see how many members have qualified for an exchange's pricing tiers, and how members have responded to tiered pricing changes (e.g., by looking at month-to-month disclosures to see how many members moved up to a new or revised tier to qualify for a more generous pricing incentive). That information could be useful in helping the Commission and public commenters assess whether pricing tier changes are reasonable, equitably allocated, not unfairly discriminatory, and do not impose a burden on

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68 15 U.S.C. 78f(b)(4).

69 15 U.S.C. 78f(b)(5).

70 15 U.S.C. 78f(b)(8).

71 15 U.S.C. 78k-1(a)(1)(C)(ii) and (iv).

competition that is not necessary or appropriate in furtherance of the purposes of the Exchange Act.[72]

Specifically, proposed Rule 6b-1(c) would require equities exchanges to submit electronically to the Commission, within five calendar days after the end of each calendar month, the information described below. Given that exchanges assess transaction prices to their members on a monthly basis according to their respective pricing tiers, the Commission believes that such information should be readily available to exchanges, since they are already familiar with the pricing tier for which each member qualifies. Further, submitting the disclosures within five calendar days after the end of each calendar month would help ensure that the information is available in a timely manner for the Commission and the public's consideration after an exchange implements a new pricing change to show the impact of the pricing change during the first month that it was billed to members. This timing would allow time for the Commission and the public to review this data before the expiration of the period within which the Commission is able to summarily temporarily suspend a proposed rule change.[73]

The content of the disclosures is intended to show a high-level and anonymized summary of the volume-based transaction tiers applicable to the execution of proprietary orders in NMS stocks for the account of a member and how many members qualify for each tier. Monthly tables would show, for example, the potential impact of any recent tiered transaction pricing change for member proprietary orders during the month that it was first in effect following the exchange's proposed rule change as well as how members qualify over time for pricing tiers that do not change. While the Commission reviews each proposed rule change, the actual effect of a

72 Under the proposed rule, an exchange would not have to identify its members by name in the proposed transparency disclosures.

73 See supra note 6 and accompanying text (discussing suspensions).

pricing change cannot be known in advance or guaranteed. The information in the proposed disclosures is intended to provide the Commission and the public with insight into the application of an exchange's volume-based transaction pricing schedule, which would allow interested persons to better assess an exchange's volume tiers, particularly where the highest rebate or lowest tiers on an exchange are occupied by only one or a few members. Therefore, having more timely and readily available information with respect to the actual effect of an exchange transaction pricing change would be useful to the Commission in determining whether to summarily temporarily suspend a proposed rule change before the deadline to summarily temporarily suspend expires. Further, the Commission also believes such information would be useful to the public in assessing the impact of the proposed rule change and further informing their comments on a proposed pricing change.

First, proposed Rule 6b-1(c)(1) would require every exchange that offers volume-based transaction fees, rebates, or other incentives in connection with the execution of proprietary orders in NMS stocks to submit electronically to the Commission each calendar month, within five calendar days after the end of the month, the number of members that executed proprietary orders in NMS stocks on the exchange for the member's account. The proposed rule would require monthly submissions because exchange fees are typically effective at the beginning of a calendar month and revised as frequently as monthly.[74] The Commission believes that this information could be used to better understand the impact of an exchange's volume-based transaction pricing structure across its members. Specifically, this number would provide the baseline denominator against which one could calculate percentages of members that met a

74 See supra note 17 and accompanying text. Further, as discussed above, monthly disclosure would also provide the Commission with timely information to consider whether to temporarily suspend a proposed rule change within the statutory deadline of 60 days beginning on the date of filing of such proposed rule change. See 15 U.S.C. 78s(b)(3)(C).

specific tier.[75] Seeing the total number of members with proprietary orders during a month would thus provide the baseline against which the number of members qualifying for any one tier in that month could be understood.

Second, proposed Rule 6b-1(c)(2) would require every exchange that offers volume-based transaction fees, rebates, or other incentives in connection with the execution of proprietary orders in NMS stocks to disclose a structured data table for each volume-based transaction fee, rebate, and other incentive that includes information to promote transparency regarding how that tier applies among the exchange's membership. Exchanges would be required to submit electronically to the Commission each calendar month, within five calendar days after the end of the month, the following information for each month:

1. A label to identify the "base" fee and rebate. Showing the base fee or rebate allows the reader of the table to compare and evaluate each tiered pricing level against what the exchange otherwise would assess to its members in the absence of volume-based pricing.[76] The inclusion of the base fee and rebate information in structured data format also would allow data analysis and computations to be performed, which would facilitate comparisons over time and across exchanges.
2. A label to identify each pricing tier. For example, "Liquidity Providing Rebate Tier 1," "Step-up Rebate Tier 1," or "Removing Tier 2." The label used in the disclosure would be required to correspond to the label the exchange uses in its pricing schedule so that the public can easily locate the tier on the exchange's pricing schedule.

75 See infra section II.D., Request for Comments (requesting comment on other benchmarks).

76 The base fee would be the highest fee that the exchange assesses to members by default if no incentives apply. Similarly, the base rebate would be the lowest rebate that the exchange provides to members if no incentives apply.

Providing a label in structured data format also would allow for data analysis using those labels to identify each pricing tier. Results from such analysis would then be easily referenced against the exchange's pricing schedule.

3. The amount of the fee, rebate, or other incentive. This information would allow the reader of the table to understand what pricing applies to each pricing tier without having to consult the exchange's pricing schedule. In addition, the inclusion of the pricing amount in a structured data format would allow data analysis and computations to be performed, which would facilitate comparisons over time and across exchanges.

4. An explanation of the tier requirements. Including this explanation would allow the reader of the table to understand the requirements for achieving each tier without having to consult the exchange's pricing schedule. In addition, having this information in structured data format would allow data analysis and computations to be performed, which would facilitate comparisons over time and across exchanges.

5. The total number of members that qualified for the base fee, base rebate, or each tier during the month. This disclosure would provide important transparency into the application of volume-based exchange transaction pricing and how the prices apply among an exchange's membership. Among other things, it could provide members with insight as to the tiers that other members with whom they compete qualify, which could be useful in considering whether an exchange's pricing is imposing a burden on the member's ability to compete with those other members. It also may provide insight into how an exchange's fees and rebates are distributed among members and whether those fees that fund the rebates the exchange offers, as well as

fund part of the exchange's operations, constitute an equitable allocation among members. It also would provide data against which exchange representations made as part of or in connection with proposed pricing changes could be verified.

Proposed Rule 6b-1(c) would require that the information be provided in an easily understandable table format, using structured data specified by the Commission.[77] Exchanges would be required to retain those records and information pursuant to 17 CFR 240.17a-1 (Rule 17a-1).[78]

Request for Comments

The Commission generally requests comment from the public on all aspects of proposed Rule 6b-1(c), including its objectives and its terms to achieve those objectives. More specific requests for comment are set forth below. As much as possible, commenters are requested to provide empirical data in support of any arguments or analyses and to offer explanations for their views.

20. Is the definition of proprietary order described in section II.D. appropriate? If the definition described in section II.D. is not appropriate, what definition should the Commission use for purposes of Rule 6b-1? Should the Commission include the definition described in section II.D (or another definition) in Rule 6b-1, or is the term commonly understood without needing to be defined in the rule?
21. Does the proposed 5 calendar day deadline for exchanges to submit the transparency disclosures after the end of each calendar month under proposed Rule 6b-1(c) provide

77 See proposed Rule 6b-1(c)(3). Under proposed Rule 6b-1(c)(3), exchanges would be required to provide information using Interactive Data File in accordance with Rule 405 of Regulation S-T.

78 17 CFR 240.17a-1. Generally, Rule 17a-1(b) requires national securities exchanges to retain specified documents for a period of not less than five years, the first two years in an easily accessible place.

exchanges with sufficient time to prepare and submit the disclosures? If an exchange files a proposed rule change related to transaction pricing that becomes effective on the first day of a month, does the proposed 5 calendar day deadline after the end of that month provide sufficient time for the Commission and commenters to consider the disclosures before the expiration of the 60-day statutory deadline to summarily temporarily suspend the proposed rule change at issue? If 5 calendar days is not sufficient for exchanges to submit the transparency disclosures, would a 7 or 10 calendar day deadline provide sufficient time? If an exchange files a proposed rule change related to transaction pricing that becomes effective on the first day of a month, would a 7 or 10 calendar day deadline after the end of that month provide sufficient time for the Commission and commenters to consider the disclosures before the expiration of the 60-day statutory deadline to summarily temporarily suspend the proposed rule change at issue?

22. Should the transparency disclosures under proposed Rule 6b-1(c) also require exchanges to report the number of their registered market makers on the exchange during a month if an exchange offers volume-based transaction pricing tiers solely applicable to its market makers, in order to allow the public to see how many registered market makers qualify for exchange tiered pricing that is applicable only to such members? Would that information be useful to calculate percentages for the volume-based transaction tiers that apply specifically to market makers (e.g., to be able to calculate that 10% of registered market makers qualified for the market-maker liquidity providing rebate Tier 2)? Would that information be helpful to better understand the impact of exchange tiered transaction

pricing on competition between registered market maker members and members that trade proprietarily but not as registered market makers?

23. Should the transparency disclosure under proposed Rule 6b-1(c) also require exchanges to separately report the number of members that participated during the month in any program that has its own volume-based transaction pricing in order to be able to compute percentages specific to the program? For example, tiers specific to Tape A, B, and C, to stocks under $1, to a retail liquidity program, or to the closing auction. Would that more granular level of information be useful to commenters in commenting on specific individual pricing proposals that affect such programs? For example, if an exchange has tiers for Tape B and reports only ten members that qualified for them in a month, would it be useful to know that only 12 out of forty members transacted in Tape B stocks on the exchange that month so that percentages can be calculated out of eligible entities rather than all members? Why or why not?

24. Should the transparency disclosure under proposed Rule 6b-1(c) also require exchanges to report the following:

    a. the applicable trading session (e.g., pre-market, opening auction, regular hours, closing auction, post-market) to allow readers of the tables to more quickly identify with certainty which tiers apply to which trading session and allow researchers to be able to use electronic means to parse that data;

    b. the applicable securities (e.g., Tape A, B, or C; sub-$1, exchange traded funds, etc.) to allow readers of the tables to more quickly identify with certainty which tiers apply to which securities and allow researchers to be able to use electronic means to parse that data;

c. whether the fee, rebate, or other incentive is applicable to adding or removing liquidity to allow readers of the tables to more quickly identify with certainty which tiers apply to which types of activity and allow researchers to be able to use electronic means to parse that data;

d. the number of MPIDs qualifying for the price level during the month to provide a different metric to assess how many members qualify for each pricing tier;

e. the cumulative volume of shares qualifying for the tier during the month to provide more context to understand the amount of volume that qualifies at each pricing tier, which the number of members alone would not capture, and to allow comparison with the exchange's overall volume;

f. the cumulative dollar amount of fees, rebates, or other incentives (as applicable) at the tier during the month to better understand the financial impact of each pricing tier, both on members and on the exchange, and allow comparison of that impact between tiers; and

g. the average transaction fee paid and rebate received by members during the month.

25. Would additional columns allow easier sorting and analysis of the tables by machine or otherwise? If so, please explain.

26. Should the transparency disclosures under proposed Rule 6b-1(c) require exchanges to report every net price combination for any volume-based fee, rebate, or other incentive, including all additive or creditable pricing (e.g., a liquidity providing rebate of $0.0028 plus a step-up tier of $0.0003 would be reported as its own pricing tier of $0.0031)?

Would doing so be helpful to show whether volume-based transaction tiers are customized to a specific member?

27. Should the transparency disclosures under proposed Rule 6b-1(c) be posted on an exchange's website in addition to, or instead of, being submitted electronically to the Commission? Why or why not?
28. Are there uses beyond those identified in this release for the transparency disclosures? For example, would having volume-based exchange transaction fees in a structured data format help members as well as other market participants and academics parse the pricing schedules across exchanges and track changes over time? Would the transparency disclosures affect routing preferences among members trading proprietarily? Would members use the disclosures to comment on exchange proposed rule change filings or advocate for exchanges to change their transaction pricing if they have more transparency of the tiers for which their competitors qualify? Would that transparency provide a useful datapoint to assess whether volume-based exchange transaction pricing proposals meet the applicable statutory standards? Why or why not?
29. Would the proposed disclosure provision raise any issues related to disclosures of proprietary trading information or other confidentiality concerns, especially if the disclosures were read in conjunction with broker-dealer Rule 605/606 reports?
30. Do exchanges enter into arrangements with members about transaction pricing for proprietary and/or agency-related orders that result in or are connected to an exchange proposal to adopt or amend a specific volume-based transaction pricing tier? If so, what types of terms and conditions might such an arrangement include? To what extent are these arrangements memorialized in writing? How many such arrangements, if any, do

exchanges enter into each year? If such arrangements exist but are not commonly memorialized in writing, should the Commission add a provision to proposed Rule 6b-1 to require exchanges to "document any arrangement, whether written or oral, concerning volume-based transaction pricing, including the parties to the arrangement, all qualitative and quantitative terms concerning the arrangement, and the date and terms of any changes to the arrangement"?

III. Paperwork Reduction Act

Certain provisions of proposed Rule 6b-1 contain "collection of information requirements" within the meaning of the Paperwork Reduction Act of 1995 ("PRA").[79] The Commission is submitting these collections of information to the Office of Management and Budget ("OMB") for review in accordance with 44 U.S.C. 3507(d) and 5 CFR 1320.11.[80] An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the agency displays a currently valid control number.[81] The title of the new collection of information is "Volume-Based Exchange Transaction Pricing for NMS Stocks."

A. Summary of Collections of Information

The proposed rule includes collection of information requirements within the meaning of the PRA.

1. Rule 6b-1(a) – Prohibition on Volume-Based Pricing for Agency-Related Volume

As discussed above, proposed Rule 6b-1(a) provides that equities exchanges shall not offer volume-based transaction fees, rebates, or other incentives in connection with the execution

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79 44 U.S.C. 3501 et seq.

80 44 U.S.C. 3507; 5 CFR 1320.11.

81 5 CFR 1320.11(l).

of agency or riskless principal orders in NMS stocks. This prohibition would require equities exchanges that currently offer volume-based transaction pricing for agency-related orders to file a proposed rule change with the Commission to update their price lists.

2. Rule 6b-1(b)(1) – Rules to Prevent Evasion

Proposed Rule 6b-1(b)(1) would require an equities exchange that offers volume-based transaction pricing in connection with the execution of proprietary orders in NMS stocks for the account of a member to adopt a rule to require its members to engage in practices that facilitate the exchange's ability to comply with the prohibition in proposed Rule 6b-1(a).

3. Rule 6b-1(b)(2) – Policies and Procedures to Prevent Evasion

Proposed Rule 6b-1(b)(2) would require an equities exchange that offers volume-based transaction pricing in connection with the execution of proprietary orders in NMS stocks for the account of a member to establish, maintain, and enforce written policies and procedures reasonably designed to detect and deter members from receiving volume-based pricing in connection with the execution of agency or riskless principal orders in NMS stocks.

4. Rule 6b-1(c) – Transparency for Volume-Based Pricing on Member Proprietary Orders

Proposed Rule 6b-1(c) would require an equities exchange that offers volume-based transaction fees, rebates, or other incentives in connection with the execution of proprietary orders in NMS stocks for the account of a member to submit electronically to the Commission information regarding those fees, rebates, or other incentives, including how many members qualify for such fees, rebates, or other incentives on a monthly basis.

B. Proposed Use of Information

1. Rule 6b-1(a) – Prohibition on Volume-Based Pricing for Agency-Related Volume

The collection of information associated with Rule 6b-1(a) would be exchange rule filings with the Commission to eliminate volume-based pricing for agency-related orders from their pricing schedules. The collection of information would bring the exchanges into compliance with Rule 6b-1(a), which would foster competition among broker-dealers and mitigate conflicts of interest for agency-related volume.

2. Rule 6b-1(b)(1) – Rules to Prevent Evasion

Proposed Rule 6b-1(b)(1) would assist exchanges in complying with proposed Rule 6b-1(a) by requiring exchanges to impose rules that require members to engage in practices, such as accurate order marking, to better enable the exchange to assess its pricing in compliance with the proposed rule.

3. Rule 6b-1(b)(2) – Policies and Procedures to Prevent Evasion

Proposed Rule 6b-1(b)(2) would assist national securities exchanges in complying with proposed Rule 6b-1(a) by requiring them to adopt policies and procedures reasonably designed to detect and deter members from receiving volume-based exchange transaction pricing in connection with the execution of agency or riskless principal orders in NMS stocks.

4. Rule 6b-1(c) – Transparency for Volume-Based Pricing on Member Proprietary Orders

The disclosure of information about how an exchange's volume-based transaction pricing for member proprietary orders applies across its membership would enhance the transparency of an exchange's tiered pricing structure. In turn, the increased transparency would enhance the ability of members, other exchanges, and the public in considering and commenting on proposed volume-based pricing changes applicable to member proprietary volume.

C. Respondents

The respondents to these collections of information would be national securities exchanges that offer volume-based transaction fees, rebates, or other incentives in connection with the execution of orders in NMS stocks. Currently, while there are 16 national securities exchanges that trade NMS stocks, only 13 offer volume-based transaction pricing. Therefore, there are 13 estimated respondents.

D. Total Initial and Annual Reporting and Recordkeeping Burdens

1. Rule 6b-1(a) – Prohibition on Volume-Based Pricing for Agency-Related Volume

As discussed above, proposed Rule 6b-1(a) would require equities exchanges that currently offer volume-based transaction pricing to file a rule change with the Commission to update their price list, if necessary, to eliminate any existing volume-based pricing that would not comply with the proposed rule. This would be a one-time initial burden, and exchanges should not incur an ongoing burden once they have updated their rules. However, the PRA burden associated with the collection of information resulting from exchange rule filings that would be required pursuant to proposed Rule 6b-1(a) would be covered by the existing PRA burden estimates for Rule 19b-4 because those changes would be filed on Form 19b-4.[82]

2. Rule 6b-1(b)(1) – Rules to Prevent Evasion

82 See SEC File No. 270-38, OMB Control No. 3235-0045 (June 21, 2023), available at https://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=202304-3235-017.

Proposed Rule 6b-1(b)(1) would require an equities exchange that offers volume-based transaction pricing to have rules to require its members to engage in practices that facilitate the exchange's ability to comply with the prohibition in proposed Rule 6b-1(a). Similar to the burden for Rule 6b-1(a), this would be a one-time initial burden, although an exchange may decide to amend the rule it adopts pursuant to proposed Rule 6b-1(b)(1) from time to time. However, the PRA burden associated with the collection of information resulting from exchange rule filings that would be required pursuant to proposed Rule 6b-1(b)(1) would also be covered by the existing PRA burden estimates for Rule 19b-4 because those changes would be filed on Form 19b-4.[83] The Commission encourages comments on this point.

3. Rule 6b-1(b)(2) – Policies and Procedures to Prevent Evasion

Proposed Rule 6b-1(b)(2) would require exchanges to establish, maintain, and enforce written policies and procedures to detect and deter members from receiving volume-based exchange transaction pricing in connection with the execution of agency or riskless principal orders in NMS stocks. Exchanges would incur an initial burden and an annual ongoing burden associated with proposed Rule 6b-1(b)(2). The Commission believes that many exchanges generally already have rules and policies and procedures in place to ensure that members are correctly marking their orders, though those policies and procedures may need to be updated to ensure compliance with the proposed rule in the context of exchange transaction pricing.

Exchanges, at a minimum, would be required to review their existing policies and procedures. Certain exchanges may need to supplement or revise their policies and procedures to ensure that they are reasonably designed to deter and detect members from receiving tiered pricing on orders for which tiered pricing is prohibited. Although the exact nature and extent of

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83 See id.

compliance with proposed Rule 6b-1(b)(2) would likely differ based on the existing policies and procedures of each respondent, the Commission estimates that the one-time, initial burden to update or adopt any additional written policies and procedures required under proposed Rule 6b-1(b)(2) would be approximately 50 hours per exchange or 650 burden hours across 13 exchanges that have volume-based transaction pricing.[84]

The 13 equities exchanges that have volume-based transaction pricing would incur annual ongoing burden hours to maintain and review their policies and procedures adopted under proposed Rule 6b-1(b)(2) to ensure their effectiveness. Those exchanges also would need to review for compliance pursuant to their policies and procedures. The Commission estimates that each exchange would likely spend an average of 25 hours per year on an ongoing basis, for a total of 325 hours across all 13 exchanges.[85]

4. Rule 6b-1(c) – Transparency for Volume-Based Pricing on Member Proprietary Orders

Proposed Rule 6b-1(c) would require exchanges that offer volume-based transaction pricing for the execution of proprietary orders in NMS stocks for the account of a member to submit electronically to the Commission aggregated information regarding how many members

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84 The Commission derived the total estimated burdens from the following estimates: (Attorney at 30 hours) + (Compliance Counsel at 10 hours) + (Chief Compliance Officer at 5 hours) + (General Counsel at 5 hours) = 50 burden hours. 50 burden hours per exchange x 13 respondents = 650 total burden hours. The Commission's estimate is informed by the estimated filing burden for Form 19b-4 (34 hours). See Supporting Statement for the Paperwork Reduction Act Information Collection Submission for Form 19b-4 (Apr. 18, 2023), available at https://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=202304-3235-017. The Commission believes that the policies and procedures required under proposed Rule 6b-1(b)(2) may require more effort to prepare than the proposed rule change required under proposed Rule 6b-1(b)(1).

85 The Commission derived the total estimated burdens from the following estimates: (Compliance Attorney at 12 hours) + (Compliance Manager at 8 hours) + (Business analyst at 5 hours) = 25 burden hours. 25 burden hours per exchange x 13 respondents = 325 total burden hours. The ongoing burden hours associated with proposed Rule 6b-1(b)(2) is estimated to be lower than the initial burdens because the Commission expects it to be less burdensome to maintain and review existing policies and procedures than to establish new ones.

qualify for those pricing tiers. These submissions would be accessible to the public via the EDGAR system and would reflect each exchange's particular pricing structure. The exchanges would likely incur an initial burden and an annual ongoing burden associated with Rule 6b-1(c). Exchanges have ready access to all of the underlying information and data necessary to comply with proposed Rule 6b-1(c) because the disclosures are summaries of the pricing schedules that exchanges maintain and the exchanges know the number of members that qualify for a particular pricing tier because they calculate the fees, rebates, and other incentives applicable to their members on a monthly basis. Consequently, the proposed rule would not require exchanges to acquire or record an entirely new and unfamiliar set of information. The exchanges, however, would be required to present the required information and data in a new structured data format and submit such information electronically to the Commission on a monthly basis.

Exchange pricing schedules are publicly available and identify all of the exchange's volume-based transaction fees, rebates, and other incentives. To comply with proposed Rule 6b-1(c)(2), the exchange would have to identify each volume-based transaction fee, rebate, and other incentive, and: (i) use a label to identify the base fee or rebate, (ii) use a label to identify each pricing tier that corresponds to the label used in the exchange's pricing schedule, (iii) identify the amount of the fee, rebate, or other incentive, (iv) provide an explanation of the tier requirement, and (v) provide the total number of members that qualified for the base fee, base rebate, or each tier during the month. Parts (i) through (iv) would require the exchange to take information from its publicly accessible pricing schedule and put it into the required structured data format. The information required for part (v) would be readily available to the exchange since it assesses transaction prices to its members on a monthly basis in accordance with its pricing schedule and thus knows which members qualify for which tiers though exchanges currently are not required to publicly disclose a tally of that information by tier.

Furthermore, proposed Rule 6b-1(c)(1) requires the exchange to identify the number of members that executed proprietary orders in NMS stocks for the member's account on the exchange during the month. Exchanges do not currently publicly disclose a tally of this information. However, exchanges generally have ready access to trading information of their members that would reveal this information and exchanges generally know which of their members are engaged in an agency business, which are engaged in proprietary trading, and which are engaged in both because exchanges broadly know about what lines of business their members are engaged in as part of their membership registration. Accordingly, the burden on exchanges to calculate the number of members engaged in proprietary trading would be low.

The Commission estimates that each exchange would incur 58 initial burden hours for the creation of new tables to ensure that data responsive to the proposed disclosure requirements is correctly collected and formatted, and to set up automated programs where appropriate, or 754 total initial burden hours across 13 exchanges.[86] The Commission does not believe the information required to be aggregated and included in disclosures made pursuant to proposed Rule 6b-1(c) would require respondents to acquire new hardware or systems to process the information required in the reports. Rather, the exchanges' initial burden would consist of creating and formatting a table that would be responsive to the requirements of proposed Rule 6b-1(c). As described above, this would require the exchanges to convert a portion of the information available on their publicly accessible pricing schedules into a structured data format.

[86] The Commission derived the total estimated burdens from the following estimates: (Sr. Programmer at 25 hours) + (Sr. Systems Analyst at 10 hours) + (Compliance Manager at 10 hours) + (Compliance Attorney at 8 hours) + (Director of Compliance at 5 hour) = 58 burden hours. 58 burden hours per exchange x 13 respondents = 754 total burden hours.

Once created, these tables should not change unless the exchanges create new pricing tiers or change the requirements or dollar amounts of existing tiers. The Commission solicits comment on the accuracy of these estimates.

Furthermore, because exchanges are not currently subject to EDGAR filing requirements, equities exchanges would incur a one-time compliance burden of submitting Form ID in order to be able to submit the disclosures electronically to the Commission through EDGAR. Respondents would apply for access to EDGAR using Form ID and receive access codes to submit documents through the EDGAR system. The Commission estimates that each filer that currently does not have access to EDGAR would incur an initial, one-time burden of 0.30 hours to complete and submit a Form ID.[87] However, the PRA burden associated with completing and submitting a Form ID would be covered by the existing PRA burden estimates for Form ID.[88]

The 13 equities exchanges that have volume-based transaction pricing also would incur annual ongoing burden hours to aggregate and disseminate the information required under proposed Rule 6b-1(c). Proposed Rule 6b-1(c) would require exchanges to submit electronically updated information each month. An exchange generally would not need to update the disclosure information required under proposed Rule 6b-1(c)(2)(i)-(iv) unless the exchange amends its pricing schedule, in which case the exchange would need to make targeted changes to these disclosures in accordance with the changes it makes to its pricing schedule. The

87 Form ID (OMB control number 3235-0328) must be completed and filed with the Commission by all individuals, companies, and other organizations who seek access to file electronically on EDGAR. Accordingly, a filer that does not already have access to EDGAR must submit a Form ID, along with the notarized signature of an authorized individual, to obtain an EDGAR identification number and access codes to file on EDGAR. See Supporting Statement for the Paperwork Reduction Act Information Collection Submission for Form ID (Dec. 20, 2021), available at https://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=202112-3235-003 (stating that it takes 0.3 hours to prepare Form ID).

88 See id.

Commission expects that the disclosures required by proposed Rule 6b-1(c)(1) and Rule 6b-1(c)(2)(v) would possibly change and could need to be updated as frequently as each month. The Commission believes the exchanges would use automated programs to meet the ongoing monthly reporting obligation under proposed Rule 6b-1(c) but each report may require staff to verify the accuracy of the information. The Commission estimates that each exchange would incur 8 burden hours per monthly report for a total of 96 ongoing burden hours on an annual basis.[89] Therefore, the Commission estimates 1,248 total ongoing annual burden hours across 13 exchanges.[90]

Table 3: PRA Summary Table

Rule	No. of Respondents	Initial Burden Hours per Respondent	Total Initial Burden Hours	Ongoing Burden Hours per Respondent on Annual Basis	Total Ongoing Burden Hours on Annual Basis
Rule 6b-1(b)(2)	13	50	650	25	325
Rule 6b-1(c)	13	58	754	96	1,248
Total		108	1,404	121	1,573

E. Collection of Information is Mandatory

The collection of information discussed above would be a mandatory collection of information.

F. Confidentiality of Responses to Collection of Information

The collection of information under proposed Rule 6b-1(a) and 6b-1(b)(1) would not be confidential because exchange proposed rule changes filed with the Commission are public

89 The Commission derived the total estimated burdens from the following estimates: (Compliance Attorney at 6 hours) + (Compliance Manager at 2 hours) = 8 burden hours per monthly filing. 8 burden hours x 12 months = 96 annual burden hours per respondent.

90 96 annual burden hours per exchange x 13 respondents = 1,248 total burden hours per year.

information. Similarly, the collection of information under proposed Rule 6b-1(c) also would not be confidential. Rather, each exchange would be required to submit electronically to the Commission the information required under proposed Rule 6b-1(c) and this information would be made publicly available. The collection of information under proposed Rule 6b-1(b)(2) concerning the written policies and procedures would contain information about an exchange's regulatory program because those materials would provide details on how the exchange enforces compliance with its rules, specifically how the exchange detects and deters members from receiving volume-based transaction pricing in connection with the execution of agency and riskless principal orders in NMS stocks. Accordingly, where the Commission requests that an exchange produce those documents, an exchange can request confidential treatment of the information. If such confidential treatment request is made, the Commission anticipates that it will keep the information confidential subject to applicable law.

G. Retention Period for Recordkeeping Requirements

National securities exchanges would be required to retain records and information pursuant to Rule 17a-1 under the Exchange Act[91] for a period of five years.

H. Request for Comments

The Commission requests comment on whether the estimates for burden hours and costs are reasonable. Pursuant to 44 U.S.C. 3506(c)(2)(B), the Commission solicits comments to: (1) evaluate whether the proposed collections of information are necessary for the proper performance of the functions of the Commission, including whether the information would have practical utility; (2) evaluate the accuracy of the Commission's estimate of the burden of the proposed collections of information; (3) determine whether there are ways to enhance the

[91] 17 CFR 240.17a-1.

quality, utility, and clarity of the information to be collected; and (4) determine whether there are ways to minimize the burden of the collections of information on those who are to respond, including through the use of automated collection techniques or other forms of information technology.

Persons submitting comments on the collection of information requirements should direct them to the Office of Management and Budget, Attention: Desk Officer for the Securities and Exchange Commission, Office of Information and Regulatory Affairs, Washington, DC 20503, and should also send a copy of their comments to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090, with reference to File Number S7-18-23. Requests for materials submitted to OMB by the Commission with regard to this collection of information should be in writing, with reference to File Number S7-18-23 and be submitted to the Securities and Exchange Commission, Office of FOIA/PA Services, 100 F Street NE, Washington, DC 20549-2736. As OMB is required to make a decision concerning the collection of information between 30 and 60 days after publication, a comment to OMB is best assured of having its full effect if OMB receives it within 30 days of publication.

IV. Economic Analysis

A. Introduction

The Commission is mindful of the economic effects, including the benefits and costs, of the proposed rule. Section 3(f) of the Exchange Act provides that when engaging in rulemaking that requires the Commission to consider or determine whether an action is necessary or appropriate in the public interest, to also consider, in addition to the protection of investors, whether the action will promote efficiency, competition, and capital formation.[92] Section

[92] See 15 U.S.C. 78c(f).

23(a)(2) of the Exchange Act also requires the Commission to consider the effect that the proposed rule would have on competition, and it prohibits the Commission from adopting any rule that would impose a burden on competition not necessary or appropriate in furtherance of the Exchange Act.[93] The analysis below addresses the likely economic effects of the proposed rule, including the anticipated benefits and costs of the amendments and their likely effects on efficiency, competition, and capital formation. The Commission also discusses the potential economic effects of certain alternatives to the approaches taken in this proposal.

The Commission is proposing to prohibit volume-based transaction fees, rebates, or other incentives in connection with the execution of agency or riskless principal orders in NMS stocks, as well as the disclosure of, among other things, the number of exchange members that qualify for different transaction pricing tiers.

The proliferation of tiered transaction pricing schedules across many exchanges has resulted in a complex system of transaction-based fees, which, along with a lack of transparency regarding how many members qualify for the various pricing tiers, makes it difficult for market participants to assess the tiered transaction pricing schedules' impact on the fees and rebates ultimately realized across exchange members. Further, it may be the case that some tiers only have a single market participant that ultimately qualifies for that tier in a given month. This lack of transparency presents a challenge to other exchange members, exchanges, and interested parties to assess for themselves whether an exchange's proposed transaction price schedule meets the applicable statutory standards, so that they can comment on such a proposed fee rule. It is also possible that the general complexity of the tiers inhibits the ability of all market participants to understand the price of exchange services and understand the impact of the

93 See 15 U.S.C. 78w(a)(2).

particular price schedules implemented. By prohibiting the application of volume-based pricing for agency-related orders the proposed rule would help simplify pricing for agency-related order flow whilst the proposed disclosure provisions will help promote transparency for principal order flow, for which volume-based transaction pricing will continue to be permitted.

While exchanges compete, in part, on the basis of their price schedules, volume-based transaction pricing may reduce competition among executing brokers, which could increase costs for investors. With volume-based transaction pricing, rebates go up and fees go down as a broker-dealer's volume increases, meaning that such pricing gives higher-volume broker-dealers lower trading costs. As a result, smaller firms, such as new entrants, face higher trading costs relative to high-volume incumbent broker-dealers, potentially reducing competition and raising costs for investors.

The implementation of volume-based transaction fee and rebate pricing introduce additional incentives to concentrate order flow on a given exchange. Volume-based tiers may encourage the concentration of a member's order flow on the exchange by offering more favorable pricing to a member who executes greater trading volume on their platform. Not only does volume-based transaction price tiering incentivize the concentration of order flow, it also indirectly increases the opportunity cost of routing orders to a competing venue, because by doing so the exchange member lowers the likelihood that it will qualify for a better pricing tier. This concentration also directly reduces the ability of an exchange not offering rebates to compete with those that do. Rebates themselves are a less transparent means of incentivizing liquidity as compared with bid-ask spreads. Thus, the proliferation of volume-based tiers may reduce efficiency by making a non-rebate-focused model difficult to sustain.

The application of volume-based pricing to non-principal order flow adds to the conflict of interest between a broker and its customer as broker-dealers may be incentivized to execute customer orders in a manner that would not be consistent with the broker-dealer's duty of best execution (to execute customer trades at the most favorable terms reasonably available under the circumstances).[94] Tier qualification is based on the exchange member's total monthly trading volume and upon qualification the pricing of that tier applies to the entirety of the member's trading volume on the exchange. Diverting order flow to other trading venues may risk the member losing out on higher rebates or lower fees for a whole swath of their order flow. Volume-based pricing tiers thereby generate the potential for exchange members to concentrate customer order flow onto particular exchanges in order to increase the likelihood of tier qualification possibly contrary to the interests of individual customers.

Exchanges, particularly those with the largest market share, are unlikely to unilaterally reduce the use of transaction pricing tiers or address the advantages that the application of these pricing tiers to agency-related volume creates for high-volume broker-dealers.[95] An exchange may perceive that unilaterally excluding agency trading volume from volume-based transaction pricing tiers would reduce one incentive for members to concentrate agency orders on their exchange, risking that their members instead direct that order flow to competing exchanges with volume-based pricing tiers. Because of this incentive to concentrate order flow, an exchange that unilaterally eliminated volume-based transaction pricing tiers for agency-related order flow could experience a loss of trading volume, especially if competing venues continue to reward

94 The Commission has previously described a non-exhaustive list of factors that may be relevant to a broker-dealers' best execution analysis. See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496 at 37538 (June 29, 2005).

95 Agency-related order flow represents a substantial share of trading volume, comprising 56% of trading volume across the equities exchanges in Jan. 2023. See infra Table 4.

agency-related order flow concentration. If all existing exchanges moved to exclude agency-related volume from volume-based transaction pricing tiers, the potential gains from a single exchange (or new entrant) deviating and charging volume-based prices could be very high, reducing the likelihood that such an effort would be successful without the aid of a regulatory prohibition. In this case the exchanges, particularly those with members with high-volume agency order flow, may also lose activity as the reduced incentive to concentrate order flow may result in broker-dealers routing order-flow to other venues.

Exchanges are required to file changes to their price schedules with the Commission and publish their pricing schedules online. However, when filing such proposed rule changes and publishing such pricing schedules, they typically refrain from disclosing the number of members that qualify for their different tiers, information which would be useful to market participants. Knowledge of this would aid exchange members, other exchanges, and the public in considering and commenting on whether proposed volume-based pricing changes are equitable and not unfairly discriminatory. The Commission does not believe that the exchanges themselves can be expected to rectify the lack of tier transparency because doing so may reveal valuable information to their competitors as well as risk potential reputational costs.[96] Along with the proposed prohibition of volume-based pricing for agency-related order flow the Commission is proposing to require exchanges to disclose the number of members which qualify for each pricing tier. Given the proposed prohibition of volume-based tiers for agency order flow the proposed disclosures would relate to tiers that would only apply to principal order flow. The Commission expects that the proposed disclosures would provide important information to

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[96] See section IV.C.3.b.ii for a discussion of the potential reputational costs that the disclosure of tier qualification numbers may have.

interested parties to provide comment on future proposed changes to an exchange's pricing schedule. Observing the distribution of principal volume tier qualification and its variation over time would allow interested parties to better assess if pricing tiers had been narrowly tailored for the benefit of some members and could be judged to be unfair. The disclosure of more information on how many members qualify for each principal pricing tier would add costs and could lead to reputational damage to an exchange if the exchange's pricing structure is publicly perceived to be unfair.

B. Baseline

1. Exchange Pricing

As discussed above in section I.B, many stock exchanges utilize a transaction pricing model that involves charging one party to a trade a per-share fee while offering the other party a per-share rebate. While exchange transaction pricing structures vary, with some exchanges charging both sides a fee or no fee at all, most of the on-exchange volume goes to exchanges which provide a rebate to the resting limit order and charge the fee to the marketable order. This type of fee structure is referred to as "maker-taker" pricing. Exchanges may employ maker-taker fees as a means of attracting competitively priced liquidity to post on an exchange, which, in turn, helps attract trading to the exchange.

Many exchanges incorporate volume-based transaction tiers into their pricing schedules, meaning that they offer improved pricing terms to members that execute more trading volume on the exchange, typically as a percent of total consolidated volume. These pricing tiers provide an incentive for exchange members to concentrate their order flow on a subset of exchanges, rather than route their orders more broadly across all competing exchanges, so as to increase their chances of qualifying for a higher tier on a specific exchange. In turn, this also helps to secure an exchange's share of the market, and in some cases may affect competition among exchanges.

a. Transaction Fees and Rebates

Exchanges generally seek to increase the amount of trading that occurs on their respective venue. Exchanges generate revenue, in part, from trade executions[97] by charging transaction fees net of any rebate they pay out, subject to a fee cap.[98] Because some market participants are sensitive to the level of fees and rebates, exchange fee schedules would affect an exchange's market share. Given that most exchanges set their access fees at or near the access fee cap it is particularly the variation in the rebates they offer which is more likely to influence an exchange's market share.[99]

A major component of the market to provide trade executions is the competition among exchanges in attracting competitively priced liquidity as a means of capturing more order flow.[100] Competitive quotes increase the likelihood that marketable orders will flow to an exchange which result in trades.[101] Exchanges aim to attract competitively priced quotes

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97 Exchanges also generate significant revenue from selling access to the data generated by the exchange as well by charging fees for connectivity.

98 See 17 CFR 242.610 (Rule 610(c)), which prohibits trading centers from imposing a fee exceeding $0.0030 to access a quote in stock priced at or greater than $1.00. This level is commonly referred to as 30 mils with 1 mil defined as $0.0001. For quotes priced less than $1.00 the fee cap is at 0.3% of the quotation price.

99 For instance, an exchange stated in a proposed rule change that "[t]he Exchange first notes that it operates in a highly competitive market in which market participants can readily direct order flow to competing venues if they deem fee levels at a particular venue to be excessive or incentives to be insufficient." See Securities Exchange Act Release No. 94252 (Feb. 15, 2022) 87 FR 9780 at 9781 (Feb. 22, 2022) (SR-CboeBZX-2022-008).

100 Exchanges also compete with off-exchange trading venues such as ATSs and wholesaler broker-dealers to attract transactions.

101 Exchanges can try to attract such quotes by paying rebates on limit orders. By offering to pay the market participant who sends a limit order to an exchange a rebate should the limit be hit, the exchange may be able to increase to total number limit orders sent to it. This may increase likelihood that the exchange ends up with the best-priced limit order in a given symbol.

because, holding other considerations constant, it is generally in market participants' interest to route their order to the venue with the best prices insofar as doing so would be consistent with the duty of best execution that broker-dealers have with regard to customer orders. In addition to these incentives, the Order Protection Rule also contributes to the competition for order flow by requiring that, with specified exceptions,[102] orders must execute at prices that are equal to or superior to the prevailing national best bid and offer (NBBO).

The competitive environment that has emerged from the desire to attract competitively priced liquidity contributes to the predominance of maker-taker pricing across exchanges.[103] In January 2023, 9 of the 16 exchanges employed maker-taker pricing and the trading volume on those 9 exchanges make up 89% of trading volume which occurred on the exchanges.[104] As discussed above in section I.B., exchanges typically adopt one of three different forms of transaction pricing models, including maker-taker, inverted, or flat.[105] The "maker-taker" pricing model encourages liquidity provision by paying rebates to limit orders (i.e., the "makers") that the exchange funds by charging fees on marketable orders.

Outside of the maker-taker pricing model, other exchanges have adopted inverted or flat pricing models. These exchanges collectively represent a smaller portion of the overall market share. As reported in Table 4, inverted pricing venues, which charge a fee to passive limit orders

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102 See 17 CFR 242.611 (Rule 611). The rule requires trading centers to "establish, maintain, and enforce written policies and procedures that are reasonably designed to prevent trade-throughs on that trading center of protected quotations in NMS stocks" (a trade-through occurs when one trading center executes an order at a price that is inferior to the price of a protected quotation). The prevention of trade-throughs means that marketable orders are more likely to be executed on trading venues with competitively priced quotations at the NBBO.

103 See supra note 15.

104 See Table 4.

105 See supra section I.B (describing the different exchange pricing models).

and pay a rebate to marketable orders, accounted for only 6% of traded share volume in January 2023. Flat venues accounted for roughly 5% of traded share volume in January 2023.
It is likely that the lack of an incentive to post limit orders in the form of a transaction rebate contributes to the limited share of these non-maker-taker venues. Conditional on the quoted price on different exchanges being the same, a trader would be expected to prefer routing its marketable order to either an inverted or free venue over a maker-taker venue to avoid the access fee and potentially earn a rebate instead. However, a market observer has stated that the occurrence of equivalently priced quotes at the NBBO between maker-taker exchanges and non-maker-taker exchanges is an infrequent occurrence.[106] The infrequency of this occurrence may be due, in part, to the lack of rebates for limit orders on these non-maker-taker exchanges.

Three exchange groups together make up a large majority of the market share in the exchange landscape with the Nasdaq group (Nasdaq, BX, Phlx (PSX)) making up 30% of the market by trading volume, the Intercontinental Exchange group (NYSE, NYSE American, NYSE Arca, NYSE Chicago, NYSE National) making up 34% and Cboe Global Markets (Cboe BZX, Cboe BYX, Cboe EDGA, Cboe EDGX) making up 24%.

Table 4 - Exchange Trading Volume and Share by Liquidity Type, Jan. 2023

The following table breaks apart the total buy and sell executed order flow from all exchange members using a sample of CAT data for the month of Jan 2023. Exchange members are identified as the set of unique CRD IDs in CAT which have directly routed orders to any of the national equities exchanges in the month. Exchange member CRDs are also verified in the CAT Industry Member Identifier List daily reference data. For each exchange the number of shares executed under the CAT allowable trade capacities of Agency, Principal, and Riskless Principal are reported. Trade capacity in CAT is defined by the exchange member for its side of a trade and represents the capacity in which the exchange member acted at trade time. Trades with the sale condition codes–M - Market Center Official Close, –Q - Market Center Official Open, –V -Contingent Trade, –7 - Qualified Contingent Trade (QCT), –8 - Placeholder for 611 Exempt, and –9 - Corrected Consolidated Close (per listing market) were excluded.

106 For a discussion of how long different exchanges spend quoting at the NBBO, see Phil Mackintosh, Three Charts That Show the Importance of a Competitive Bid/Offer NBBO (Dec. 4, 2018), available at https://www.nasdaq.com/articles/three-charts-that-show-the-importance-of-a-competitive-bid-offer-nbbo-2018-12-04.

The share of total trading volume across all exchanges for orders of a specific capacity are reported under the trading volume. The fourth column, "Total" reports the total trading volume for each exchange with the exchange's volume-based exchange market share reported below.

Exchange	Agency	Principal	Riskless Principal	Total
Nasdaq[b] (Maker-Taker)	42,381,231,425 32.04%	26,084,186,949 24.37%	256,443,292 13.90%	68,721,861,666 28.50%
NYSE[a] (Maker-Taker)	23,578,087,344 17.82%	15,663,850,087 14.64%	145,114,774 7.86%	39,387,052,205 16.33%
NYSE Arca[a] (Maker-Taker)	19,581,312,954 14.80%	19,600,669,528 18.31%	129,269,046 7.00%	39,311,251,528 16.30%
Cboe EDGX[c] (Maker-Taker)	13,478,973,097 10.19%	12,512,933,159 11.69%	677,345,568 36.70%	26,669,251,824 11.06%
Cboe BZX[c] (Maker-Taker)	9,612,667,056 7.27%	10,242,339,878 9.57%	367,462 0.02%	19,855,374,396 8.23%
MEMX (Maker-Taker)	6,308,673,864 4.77%	6,746,470,107 6.30%	186,541,931 10.11%	13,241,685,902 5.49%
IEX (Flat)	6,860,652,435 5.19%	3,905,276,620 3.65%	7,011,129 0.38%	10,772,940,184 4.47%
Cboe EDGA[c] (Inverted)	3,401,951,122 2.57%	2,289,187,280 2.14%	109,407,328 5.93%	5,800,545,730 2.41%
Cboe BYX[c] (Inverted)	1,950,854,778 1.47%	2,582,413,642 2.41%	131,506,520 7.13%	4,664,774,940 1.93%
MIAX Pearl (Maker-Taker)	1,803,716,409 1.36%	2,527,733,474 2.36%	153,910,919 8.34%	4,485,360,802 1.86%
NYSE National[a] (Inverted)	827,209,968 0.63%	1,489,403,927 1.39%	1,340,645 0.07%	2,317,954,540 0.96%
Phlx (PSX)[b] (Maker-Taker)	877,534,988 0.66%	1,342,954,596 1.25%	53,580 0.00%	2,220,543,164 0.92%
BX[b] (Inverted)	713,708,890 0.54%	965,538,116 0.90%	32,818,578 1.78%	1,712,065,584 0.71%
NYSE American[a] (Maker-Taker)	712,130,625 0.54%	818,767,495 0.77%	14,185,250 0.77%	1,545,083,370 0.64%
NYSE Chicago[a] (Flat)	177,946,002 0.13%	254,499,006 0.24%	120,789 0.01%	432,565,797 0.18%
LTSE (Free)	10,749,491 0.01%	1,411,063 0.00%	0 0.00%	12,160,554 0.01%
Total	132,277,400,448 100.00%	107,027,634,927 100.00%	1,845,436,811 100.00%	241,150,472,186
	54.85%	44.38%	0.77%	

[a] Part of NYSE/ICE Exchange group of exchanges

[b] Part of the Nasdaq group of exchanges

[c] Part of the Cboe group of exchanges

The Commission estimates revenues generated from net transaction fees for the different exchange groups using volume-weighted average net capture rates which were made publicly available either through 10-Q filings or published online; the reported net capture rates are averages for all the different transactions occurring across the various equities exchanges in each exchange group.[107] The Commission estimates that one exchange group had revenue generated from net transaction fees in its US equities exchanges of approximately $37,347,258 in January 2023,[108] another exchange group had revenue of $46,498,861,[109] and a third exchange group had revenue of $10,828,089.[110]

The four exchanges outside of those three exchange groups made up the remaining 11.81% of the market in January 2023. One exchange is a free exchange, meaning that it does not charge access fees (nor does it pay out transaction rebates) and hence does not generate revenue from transaction net capture fees.[111] Another exchange charges a flat fee of $0.0009 per share to both liquidity providers and liquidity takers leading to net capture of $0.0018 and an estimated transactions revenue of $19,391,292 for January 2023.[112] The remaining two exchanges are not publicly-traded issuers and do not publicly disclose their net capture rates.

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107 The Commission is making the assumption that the reported average net capture rates collected from public disclosure hold for the trading volume reported in Table 4. The publicly sourced data regarding average net capture rates for the exchanges which are publicly-traded issuers include the period of analysis, January 2023, as the disclosures pertain to Q1 2023. See infra notes 126, 127, 128.

108 The revenue numbers are calculated as the sum of the total trading volume for the venues in an exchange group reported in Table 4 by their average net capture rate. Intercontinental Exchange, the parent firm of NYSE, reports on page 38 of its Form 10-Q filing for the three months ending Mar. 31, 2023 that its net capture for U.S. equities transactions was approximately 4.5 mils in Q1 2023.

109 Nasdaq did not report its net capture in its Form 10-K filing, however, Nasdaq provides information on its investor relations webpage which indicates that the average net capture across all Nasdaq platforms for U.S. equities transactions in Q1 2023 was 6.4 mils. See Nasdaq 2023/2022 Monthly Volumes, NASDAQ, available at https://ir.nasdaq.com/static-files/465d2157-c476-4546-a9f7-8d7ad0c9be77.

110 Cboe reports in its Form 10-Q filing for the three months ending Mar 31, 2023, that its net capture for U.S. equities transactions was approximately 1.9 mils for Q1 2023.

111 The exchange, LTSE does not charge fees to transact. See supra note 15.

112 See IEX pricing schedule, supra note 15.

The Commission understands based on Staff conversations with industry members that the net capture for non-auction trading in stocks is likely close to \$0.0002 per share and uses this assumed net capture rate when estimating the transaction revenues for these exchanges.[113] Using the assumed net capture of \$0.0002, or 2 mils, the Commission estimates the January 2023 transaction revenues for these two exchanges to be \$2,648,337 and \$897,072 respectively.[114]

The maker-taker transaction pricing model and higher rebates play an important role in attracting competitively priced quotes and capturing market share, as suggested by the market share statistics of Table 4. There are important factors which serve to limit the liquidity of lower volume exchanges; these exchanges are not the primary listing market for any securities as they are newer, and they also tend to be more specialized or structured to facilitate specific trading strategies.

The idea that the maker-taker transaction pricing model and rebates offered play an important role in exchange market share is also supported by the results of an experiment run by one maker-taker exchange, Nasdaq, in which it reduced both its fees and rebates. The experiment resulted in less competitive liquidity being supplied to the exchange along with a decrease in the exchange's market share in the treated stocks. That market share fell despite the reduction in transaction fees being greater than the reduction in rebates suggests that changes in the transaction pricing applicable to liquidity-providing order flow may have a greater effect on exchange market share than similar changes in the transaction pricing applicable to liquidity-demanding order flow. In this experiment, the exchange unilaterally reduced both access fees

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113 The assumption that the remaining two exchanges (MEMX & MIAX Pearl) earn an estimated 2 mils net capture per transaction is in line with prior Commission discussions and would put them in line with the net capture rate reported by the Cboe group. See supra note 110.

114 See supra note 98 defining the term "mil".

and rebates for a set of 14 stocks. Over the course of the experiment Nasdaq reported a significant drop in a number of liquidity provision measures.[115] Per the Nasdaq reports, the average number of shares displayed by Nasdaq at the NBBO in the experiment declined by 45%, average time at the NBBO declined by 4.7 percentage points from 92.7% to 88.0%, liquidity share[116] fell from 29% to 19%, and the share of liquidity provided by the exchange's top five liquidity providers prior to the experiment decreased from 44.5% to 28.7%. These changes align with the findings of one academic study (the "Swan Study") which also analyzed the Nasdaq experiment.[117]

Both the Nasdaq reports and the Swan Study found that Nasdaq's market share fell in traded stocks, with Nasdaq reporting an average decline of 1.8 percentage points. The Swan Study found that the Nasdaq share loss was captured by the two highest rebate-paying stock exchanges. As the experiment also reduced fees in addition to rebates, the reported reduction in market share was a net effect of both reductions, it is likely that the reduction in market share would be greater had access fees not also been reduced.[118] Other factors which may have

115 Nasdaq produced two reports concerning their access fee experiment. See Frank Hatheway, Nasdaq Access Fee Experiment (Mar. 2015), available at https://pages.stern.nyu.edu/~jhasbrou/SternMicroMtg/Old/SternMicroMtg2015/Supplemental/Access%20Fee%20Experiment%20-%20Month%20One%20Report%20Final.pdf. See also Frank Hatheway, Nasdaq Access Fee Experiment Report II (Mar. 2015), available at https://pages.stern.nyu.edu/~jhasbrou/SternMicroMtg/Old/SternMicroMtg2015/Supplemental/Access%20Fee%20Experiment%20-%20Second%20Report%20Final.pdf ("Nasdaq Access Fee Experiment Report II").

116 "Liquidity Share" is a measure of an exchange's displayed liquidity, factoring in both the frequency it is at the NBBO and the size of its quote. The calculation involves weighing the average size quoted by an exchange that is concurrently quoting at the NBBO by the duration of time spent quoting at the NBBO to yield a quantity which is referred to as "Average Liquidity." This value is then divided by the total average liquidity of all exchanges quoting the stock to compute the liquidity share. See Nasdaq Access Fee Experiment Report II, supra note 115.

117 See Yiping Lin, Peter Lawrence Swan, and Frederick H. deB. Harris, "Why Maker-Taker Fees Improve Exchange Quality: Theory and Natural Experimental Evidence" (Mar. 14, 2019), available at https://ssrn.com/abstract=3034901 (retrieved from SSRN Elsevier database).

118 Conditional on compliance with Rule 611 and keeping all else equal, including other considerations of execution quality, traders typically would prefer to route their marketable order to a trading venue with a

contributed to the decrease in market share include the improved fill rates and fill times, as well as narrower effective and realized spreads net of transaction rebates and fees on competing exchanges which were reported in the Swan Study.

b. Volume-Based Pricing Tiers

Stock exchange transaction pricing schedules often operate with a tiered system that relies on the volume an exchange member brings to the exchange to determine its transaction pricing tier for a given month. Qualification to different rebate and fee tiers is determined at the end of each month and typically is based on a member's average daily share volume for the month as a percentage of the total consolidated volume that month.[119] This kind of pricing method where exchanges offer different fee and rebate levels to members based on the amount of trading volume each member executes on the exchange is referred to as volume-based exchange transaction pricing.[120] The tier threshold is often expressed as a percentage of the total consolidated volume reported by one or all consolidated tapes for the month.[121] It is common that tier thresholds are defined relative to the trading volume of the market as a whole; it is seldom the case that tier thresholds are set as an absolute number of shares.

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lower access fee. Thus, a reduction in access fees would help attract marketable orders and increase trading volume.

119 See supra note 17 (discussing the Commission's Access Fee Proposal that would require exchanges to make the amounts of all fees and rebates determinable at the time of execution, which would require volume-based transaction pricing tiers to be applied prospectively rather than retroactively to the start of a month).

120 Volume-based tiers in trading often have different qualifications. For instance, some tiers require adding Average Daily Volume ("ADV"), while others consider total ADV (both add and remove volume), and some tiers are tape dependent. There are also specific tiers for mid-point liquidity ("MPL") orders, non-displayed limit orders, and opening/closing auction trading, to name a few.

121 For example, an exchange may require a member to accumulate, on a specific tape, an amount of adding trading volume (trade volume from trades which executed against a member's liquidity providing order) greater than X% of the total consolidated trading volume for that specific tape.

The Commission understands that exchanges make use of volume-based tiers as a means of encouraging their members to execute orders on their venue. Volume-based tiers encourage exchange members to concentrate, or execute a larger share of their order flow, on the exchange in order to qualify for the higher rebates or lower fees offered by higher volume pricing tiers.[122]

The pricing terms of the tiers reserved for high volume exchange members may be subsidized through higher net capture rates of lower-volume members or via other lines of business such as those earned from providing connectivity and market data.[123] The fact that many exchanges offer high-tier rebates that exceed the Rule 610 access fee cap in magnitude implies a need for cross-subsidization to support these rebate tiers. In a 2018 roundtable on market data and market access, one exchange that participated in the roundtable stated that five out of their ten largest members by trading volume receive payment from the exchange even after factoring in the costs of connectivity and market data.[124] This suggests that the rebates an exchange pays to those members may be subsidized by the net transaction fees paid by other exchange members or the fees paid for other services such as data and connectivity.

Newer or smaller exchanges may find it difficult to attract order-flow away from the larger legacy exchanges given that a sizable portion of order flow is provided by the high-volume exchange members which qualify for the top tiers and similar terms would have to be offered to those members to pull them away. As previously discussed, exchanges are able to use volume-based pricing as a means of increasing the rebates earned by a few high-volume

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122 See infra section IV.B.2 for a discussion of the incentives introduced by volume-based pricing tiers.

123 A flat pricing schedule does not allow an exchange to offer some traders a higher rebate (lower fee) by offering others a lower rebate (higher fee). In principle the cross-subsidization of rebates from other business lines could occur in the absence of pricing tiers though this is likely to be more costly since the flat nature of the pricing schedule would mean that the trading of all members would have to subsidized rather than, potentially, just the trades of the members which qualify for the preferential pricing tiers.

124 See Remarks of Chris Concannon, supra note 3, Transcript at 74-75.

exchange members often at the expense of members with less trading volume; the lack of a large trading base could make it difficult to profitably subsidize the top tiers from the trades of other exchange members. Smaller or newer exchanges looking to compete with larger exchanges would find it difficult to compete with larger exchanges by cutting transaction fees. In the case of a maker-taker exchange, cutting take fees may require lower rebates for liquidity provision by lowering the degree to which those rebates can be funded via take fees. Cutting make rebates relative to those offered on other exchanges would likely hamper an exchange's tendency to attract competitively priced limit orders putting the exchange in a competitively disadvantageous position. In the case of an inverted or flat venue, cutting make fees could help an exchange attract more liquidity however because these exchanges by their very nature, charge fees rather than pay rebates to liquidity providers, makes them less attractive as a venue to post a competitive quote, all else being equal. Alternatively, smaller or newer exchanges could try to compete with the larger maker-taker exchanges on the basis of offering larger make rebates, lacking substantial trading volume could make cross-subsidization of rebates difficult possibly meaning that the exchange may need to operate their trading business at a loss in order to match or beat the top rebates of other exchanges.[125] The lack of a similar membership base, trading volume, and data and connectivity subscribers make it difficult for smaller exchanges to sustainably provide volume-based tiers competitive with the top tiers offered by the largest exchanges.

[125] For example, a new exchange in 2020 implemented a pricing schedule with high rebate tiers which would generate losses while the venue tried to establish market share. See Shanny Basar, New Exchange MEMX Details 'Smart' Pricing Structure (Sept. 15, 2020) available at https://www.tradersmagazine.com/am/memx-unveils-smart-pricing-structure/.

An alternative view on the complexity of pricing schemes offered by the dominant exchange families[126] is to regard the range of volume-based discounts as a form of product proliferation, a preemptive strategy for limiting the range of profitable choices available for newer and smaller exchanges. Reminiscent of behavior by established firms when attempting to corner the market across other industry settings,[127] the range of pricing bundles offered by the dominant exchanges may likewise have partial exclusionary effects.

c. Tying Closing Auction Fees to Consolidated Volume

The daily closing price of NMS equities is typically established by means of the closing auction, which is run at the end of each trading day by the primary listing exchange for the respective equity. Because of the significance of the closing price to a variety of financial market functions, including the measuring of tracking error in index funds, many market participants are highly desirous of executing trades at precisely the daily closing price, an outcome that can be facilitated by participating in the closing auction on the listing exchange. Listing exchanges may be able to exploit this demand for participation in the closing auction by offering discounts on auction orders to members who send volume into the intraday trading sessions. This practice may help listing exchanges preserve or extend their market power, potentially at the expense of reducing the welfare of the exchange members.

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126 Most of the public exchanges are organized based on families of affiliated exchanges, where the exchanges within a family are owned by the same holding company but may employ distinct business models (e.g., charging a "make" fee on taker-maker exchanges or a "take" fee on maker-taker exchanges).

127 See JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION, 346-52 (1988) for a discussion of leading firms' incentive to pack the product space so as constrain the market niche for new or minor firms. A motivating example is "the Swedish Tobacco Company, upon losing its legal monopoly position in 1961, reacted by offering twice as many brands." Id. at 346. Dominant firm's preemptive decision to introduce a menu of latent choices is also analyzed in Yong Chao, Guofu Tan, and Adam Chi Leung Wong, "Optimal Nonlinear Pricing by a Dominant Firm under Competition", 14 AM. ECON. J.: MICROECONOMICS 240 (May 2022).

A number of factors contribute to high and growing[128] demand for participation in closing auctions. One significant reason for this is that an important performance metric for passive funds, the tracking error, is tied to the daily closing price set by these closing auctions. For this reason, index funds and exchange-traded funds are motivated to concentrate flow in the closing auctions so as to minimize tracking errors.[129]

Listing exchanges operate closing auctions that set an official closing price for their listed securities.[130] This makes them an obvious means by which a market participant can get its trades executed at the official closing price. Some alternatives do exist, for example, some broker-dealers may offer to internalize customer orders at the closing auction price,[131] once it is determined on the listing exchange. Another example of an alternative is the pre-match close offered by one exchange for market-on-close orders.[132] However, if a market participant wishes to execute an on-exchange trade at the official closing price determined by the primary listing exchange, and use a limit-on-close order for that trade, the only option is to send that order to the listing exchange's closing auction.

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128 For S&P 500 stocks, the daily average fraction of a stock's closing auction trades over total shares traded increased from 3.5% in 2010 to 10% in 2018. See Yanbin Wu, "Closing Auction, Passive Investing, and Stock Prices," 9 (Aug. 2019), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3440239. Another source reports that the shares that the NYSE closing auctions commanded doubled over a five-year period to nearly 7% of NYSE-listed volume in recent years. See "Behind the Scenes – An Insider's Guide to the NYSE Closing Auction," available at https://www.nyse.com/article/nyse-closing-auction-insiders-guide.

129 Yanbin Wu, "Closing Auction, Passive Investing, and Stock Prices," supra note 128.

130 The exchanges that currently have listings are Nasdaq, NYSE, NYSE Arca, and Cboe's BZX. See Cboe's "The Impact Closing Auctions Have on Volumes" (Nov. 18, 2020), available at https://www.cboe.com/insights/posts/the-impact-closing-auctions-have-on-volumes/.

131 Staff experience suggests that some broker-dealers aim to enhance their volumes and attract flow by guaranteeing the listing market's official closing price at no additional cost.

132 See https://www.cboe.com/us/equities/trading/offerings/cboe_market_close/.

Some primary listing exchanges implement closing auction pricing tiers that involve discounts which are based on the member's overall trading volume on the same exchange.[133] Specifically, the exchange pricing schedule is such that higher consolidated volume (overall volume from both auctions and regular trading hours) helps broker-dealers qualify for more favorable fees and rebates on auction orders. Industry practitioners refer to "auction linked pricing" as a discount on auction orders based on the continuous trading volume.[134] This practice is a form of tying or conditional pricing. The related literature, referenced in the following paragraph, has shown that tying can reduce competition and has potential exclusionary effects. There is a lack of consensus within the economic literature on the anti-competitive potential of offering price discounts for allocating a target purchasing level in a bundled goods context. However, the theoretical literature has provided examples arguing that tying the sales of a monopolized or dominant product to other product(s) can be a profitable way for a firm to protect its market power, oftentimes through partially foreclosing the more competitive portion of the market to competitors.[135] In other imperfectly competitive market settings, offering more generous terms for purchasing a bundle of different goods can also result in greater producer

133 See Nasdaq Rule 118(d)(2): Section 118. Nasdaq Market Center Order Execution and Routing for a description of Nasdaq closing auction tiers that include volume criteria based on continuous volume: https://listingcenter.nasdaq.com/rulebook/nasdaq/rules/Nasdaq%20Equity%207#section_118_nasdaq_market_center_order_execution_and_routing.

134 MEMX comment letter to Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders, https://www.sec.gov/comments/s7-30-22/s73022-20163328-333796.pdf.

135 Dennis W. Carlton and Michael Waldman, "The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries," 33 RAND J. ECON. 194 (Summer 2002). Michael D. Whinston, "Tying, Foreclosure, and Exclusion", 80 AM. ECON. REV. 837 (Sept. 1990). See also a discussion of tying from W. Kip Viscusi, Joseph E. Harrington, and David E. M. Sappington, ECONOMICS OF REGULATION AND ANTITRUST, Chapter 7 Vertical Mergers and Vertical Restraints, 296 – 312 (5th ed. 2018). Yong Chao, Guofu Tan, and Adam Chi Leung Wong, "All-Units Discounts as a Partial Foreclosure Device", 49 RAND J. ECON. 155 (2018).

surplus.[136] Bundling arrangements may have partial exclusionary effects when a dominant firm takes advantage of its captive (non-contestable) portion of demand and ties its captive demand with part of its contestable demand.[137] More generally, both the theoretical and empirical literatures have offered evidence that bundling, or offering discounts for purchasing a portfolio of different goods, can result in greater producer surplus,[138] but sometimes at the expense of consumer surplus.[139]

The same forces analyzed in the literature on bundling and tying may be present in the case of listing exchanges and their closing auction discounts. Because of the high value placed on executing in the closing auction described above, listing exchanges are able to offer a relatively unique trading mechanism. This is in contrast to intraday trading, where the orders may potentially interact with multiple trading platforms.[140] The use of volume discounts that apply across both mechanisms may enable the listing exchanges to leverage their position as the sole primary listing exchange and provider of a closing auction to increase order flow to their

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136 For example, in the context of firms competing to attract demand from customers who differ in their preferences over different goods, some firms may use bundling as a way differentiate their products, and thereby soften price competition. For a numerical example of bundling as a way for firms to differentiate their products in a price discrimination context see Paul Belleflamme and Martin Peitz, INDUSTRIAL ORGANIZATION: MARKETS AND STRATEGIES, Chapter 11.3.1 Bundling as a Way to Soften Price Competition, 274 (2010).

137 By tying part of the competitive portion to its captive portion, the dominant firm draws sales away from its capacity-constrained rival in Yong Chao, Guofu Tan, and Adam Chi Leung Wong, "All-Units Discounts as a Partial Foreclosure Device", 49 RAND J. ECON. 155 (2018).

138 Katherine Ho, Justin Ho, & Julie Holland Mortimer, "The Use of Full-Line Forcing Contracts in the Video Rental Industry", 102 AM. ECON. REV. 686 (2012).

139 Yong Chao, Guofu Tan, and Adam Chi Leung Wong, "All-Units Discounts as a Partial Foreclosure Device", 49 RAND J. ECON. 155 (2018). Gregory S. Crawford, "The Discriminatory Incentives to Bundle in the Cable Television Industry", 6 QUANTITATIVE MKTG. & ECON. 41 (2008).

140 The introduction of Reg NMS, in particular the Order Protection Rule, requires investors to interact with the exchange(s) offering the most favorable execution prices throughout the regular trading session.

intraday trading.[141] As described above, the economic literature shows that this may reduce the welfare of the exchange members.

In addition to leveraging market power, the economic literature suggests that bundling can increase exchange profit by averaging (through aggregating) consumer preferences.[142] To the extent that broker-dealers differ in their willingness to participate in the closing auction and intraday trading, tying execution fees for the closing auctions to total volume may help the listing exchanges capture greater demand from a segment of the participants. By drawing in broker-dealers who might otherwise have little interest in participating on one of the venues (e.g., closing auction or intraday trading), the listing exchanges may earn greater revenue than what would be possible with component (unbundled) pricing for closing auction and intraday trading.

To the extent exchanges are engaged in imperfect competition for order flow across heterogeneous broker-dealers, bundling as a product differentiation strategy could also help a listing exchange extract more order flow.[143] Auction linked pricing may be particularly effective in attracting order flow from broker-dealers who value gains from executing trades during the closing auction but who might otherwise have lower valuation for intraday trading on that exchange.

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141 Specifically, tying closing auction fees to intraday trading encourages broker-dealers who value participation in the closing auction to direct more order flow to the primary exchanges, in order to benefit from volume-based discounts during the closing auctions.

142 Chenghuan S. Chu, Phillip Leslie, and Alan Sorensen, "Bundle-Size Pricing as an Approximation to Mixed Bundling", American Economic Review 101, 263–303 (2011). Gregory S. Crawford, "The Discriminatory Incentives to Bundle in the Cable Television Industry", 6 QUANTITATIVE MKTG. & ECON. 41 (2008). Katherine Ho, Justin Ho, & Julie Holland Mortimer, "The Use of Full-Line Forcing Contracts in the Video Rental Industry", 102 AM. ECON. REV. 686 (2012).

143 For a numerical example of bundling as a way for firms to differentiate their products in a price discrimination context see Paul Belleflamme and Martin Peitz, INDUSTRIAL ORGANIZATION: MARKETS AND STRATEGIES, Chapter 11.3.1 Bundling as a Way to Soften Price Competition, 274 (2010).

While the exchanges may benefit from auction-linked pricing, the impact on broker-dealers and their customers is ambiguous. In general, depending on the particular situation price discrimination can either increase consumer welfare or decrease it. Nevertheless, a significant number of academic studies have found that bundling decreases consumer surplus.[144] Consumer surplus (i.e., consumer welfare), is typically defined as the net benefit the buyer derives from his optimal consumption bundle, after adjusting for the price he incurs from his preferred purchase.

2. Volume-Based Tiers and Order Routing Incentives

Volume-based tiering serves exchanges by incentivizing their members to concentrate their order-flow onto their platform. The following analysis presents evidence consistent with this notion.[145] Maker-taker exchanges with a higher number of pricing tiers are not only larger but have a higher proportion of their members execute a plurality of their order flow on their platform; plurality members are also responsible for a greater proportion of the trading volume executed on these exchanges. The analysis also finds that individual member order flows are on average more concentrated than they would be had their executed order flow been split in line with the relative market shares of the exchanges. Order flow deviations from the relative market weights which contribute to higher concentration measures tend to be those which place more weight on maker-taker exchanges with the most pricing tiers.

The use of volume-based pricing tiers by exchanges can affect the routing decisions of their members through the incentives it introduces. Volume-based pricing encourages members to concentrate their order flow on exchanges where members hope to increase their chances of

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144 Consumer surplus is the analog of investor surplus from the exchange setting.

145 Throughout this section the analysis relies on a population of only 16, a small sample reduces the statistical confidence (the probability that an estimated quantity is not the result of random chance) in the estimation of any relationships between variables. Despite this limitation, the evidence presented in this section is consistent with volume-based price tiering promoting the concentration of order flow rather than resulting from random chance.

qualifying for a preferential pricing tier. Qualifying for a better pricing tier can result in both saving on transaction costs (or even profiting from net rebates), and potentially obtaining a competitive advantage in the market to provide non-member customers access to the exchanges.[146]

The following table examines the relationship between market share, the average share of member order flow, and the number of tiers on an exchange. Panel A of Table 5 shows that the average share of member order flow which is directed to the exchange tends to be greater for exchanges with more tiers, in particular the maker-taker exchanges.

Table 5 - Exchange Tiers, Pricing, Market Share, and Plurality Members

This table lists out market share, # of tiers, base rebates and fees, and order flow concentration statistics for the 16 national equities exchanges using the total executed buy and sell order flow from all exchange members using a sample of CAT data for the month of Jan. 2023. Exchange members are identified as the set of unique CRD IDs in CAT which have directly routed orders to any of the national equities exchanges in the month. Exchange member CRDs are also verified in the CAT Industry Member Identifier List daily reference data. For each exchange the number of shares executed under the CAT allowable trade capacities of Agency, Principal, and Riskless Principal are reported. Trade capacity in CAT is defined by the exchange member for its side of a trade and represents the capacity in which the exchange member acted at trade time. Trades with the sale condition codes–M - Market Center Official Close, –Q - Market Center Official Open, –V- Contingent Trade, –7 - Qualified Contingent Trade (QCT), –8 - Placeholder for 611 Exempt, and –9 - Corrected Consolidated Close (per listing market) were excluded. Market share measures are pulled from Table 4 and the number of tiers correspond to the count of the number of tiers reported are collected from the exchange price schedules which were effective for the month of Jan. 2023 in the same method as for Table 1.

Panel A: Base Rebates and Average Member Order flow shares. Base Rebate and Fees correspond to the default pricing for orders which do not qualify for any tiers listed on an exchange's pricing schedule. Average member order flow share is a simple average of the proportion of trading volume that an exchange member executed on the exchange relative to the total trading volume across all the other exchanges they are a member of. Member order flow share is calculated as the number of shares executed by an exchange member during regular trading hours over the month of Jan. 2023 divided by the total number of shares the exchange member executed across all national stock exchanges during regular trading hours over the month of Jan. 2023.

	Exchange	Market Share	# of Tiers	Base Fee	Base Rebate	Avg Member Orderflow Share
Mak	Nasdaq	28.46%	74	-30	13	51.52%

[146] See infra section IV.B.4 (discussing the market to provide exchange access to non-members).

	NYSE	16.45%	93	-30	12	35.43%
	NYSE Arca	16.28%	72	-30	20	31.59%
	Cboe EDGX	11.04%	19	-30	16	15.28%
	Cboe BZX	8.22%	26	-30	16	14.17%
	MEMX	5.48%	13	-30	20	8.59%
	MIAX Pearl	1.86%	8	-29	29	3.41%
	Phlx (PSX)	0.92%	4	-30	20	5.89%
	NYSE American	0.64%	10	-30	20	4.82%
Non-Maker-Taker	IEX	4.46%	0	-9	0	22.58%
	Cboe EDGA	2.40%	8	-30	16	7.59%
	Cboe BYX	1.93%	11	-20	2	3.88%
	NYSE National	0.96%	11	-29	0	1.30%
	BX	0.71%	20	-30	-7	0.94%
	NYSE Chicago	0.18%	0	-10	0	10.28%
	LTSE	0.01%	0	0	0	0.01%

Panel B: Plurality Members and Plurality Order flow. A plurality member for an exchange is any exchange member who executes the largest share of their order flow on that exchange. For each exchange member the member order flow share (described above in panel A) is computed for every exchange for which they are a member of, the member is considered to be a plurality member for the exchange for which their member order flow share is highest. Exchange members are identified as the set of unique CRD IDs in CAT which have directly routed orders to any of the national equities exchanges in the month. Exchange member CRDs are also verified in the CAT Industry Member Identifier List daily reference data. The "percent of plurality members" is computed as the proportion of exchange members who are plurality members. "Average plurality order flow share" is a simple average of the proportion of order flow executed on the exchange across plurality members only. "Volume Due to Plurality members" is the proportion of exchange total volume which is attributable to plurality members. The last column, average number of exchanges of plurality members ("Avg # of Exgs of Plurality Members"), is a simple average of the number of exchanges for which a plurality member is a member of.

	Exchange	Market Share	# of Tiers	Percent of Plurality Members	Average Plurality Orderflow Share	Volume Due to Plurality Members	Avg # of Exgs of Plurality Members
Maker-Taker	Nasdaq	28.46%	74	64.71%	70.35%	89.93%	5.9
	NYSE	16.45%	93	29.21%	91.47%	17.97%	2.7
	NYSE Arca	16.28%	72	31.48%	64.75%	15.98%	5.4
	Cboe EDGX	11.04%	19	11.76%	64.48%	11.83%	4.9
	Cboe BZX	8.22%	26	7.69%	89.79%	0.16%	2.3
	MEMX	5.48%	13	3.85%	52.53%	1.02%	9.5
	MIAX Pearl	1.86%	8	2.78%	30.48%	1.77%	10
	Phx (PSX)	0.92%	4	4.44%	100.00%	0.06%	1
	NYSE American	0.64%	10	3.70%	100.00%	0.49%	1
Non-Maker	IEX	4.46%	0	22.99%	79.08%	10.17%	4.5
	Cboe EDGA	2.40%	8	5.56%	98.46%	0.01%	1.3

Cboe BYX	1.93%	11	1.41%	100.00%	0.01%	1
NYSE National	0.96%	11	0.00%		0.00%	
BX	0.71%	20	0.00%		0.00%	
NYSE Chicago	0.18%	0	10.00%	100.00%	0.62%	1.0
LTSE	0.01%	0	0.00%		0.00%	

Panel A of Table 5 shows that an exchange's market share is more associated with the number of pricing tiers than they are with either the base fee or rebate. The coefficient of correlation between the number of tiers and market share is 0.87 whereas the coefficients of correlation of market share with the base fee and rebate are -0.34 and 0.20 respectively. Focusing on the maker-taker exchanges, the base take fees are all set at 30 mils with a single exception at 29 mils. Among the maker-taker exchanges there does not appear to exist a clear relationship between the base rebate paid out and an exchange's observed market share. The smallest three maker-taker exchanges, with a combined market share of 3.42%, have a volume-weighted average base rebate of 23.7 mils which is substantially larger than the 13.5 mil average base rebate for the three largest maker taker exchanges which make up over 60% of the market. On the other hand, Table 5 shows a clearer correspondence between the count of tiers on a maker-taker exchange's price schedule and its market share with the three largest exchanges having a volume-weighted average of 61 tiers and the three smallest maker-taker exchanges having 3.4 tiers on average. To the extent that rebates may play a role in order-routing considerations, as discussed in section IV.B.1, the evidence presented here is consistent with the notion that tiered rebate rates are more important than the base rebates. This is not to suggest that merely having a greater number of pricing tiers would result in greater market share but rather that if the number of tiers serves as a viable proxy for how important tiering is for an exchange's pricing then the apparent association between the market share and number of tiers is consistent with the hypothesis that tiers incentivize the concentration of order flow and increase market share.[147]

Consistent with the idea that price tiering incentivizes the concentration of order flow, there appears to be a positive association between the number of tiers on an exchange's pricing schedule and that exchange's share of members which execute at least a plurality of their trading volume on the exchange; the correlation coefficient between the two variables is 0.76. Panel B of Table 5 reports statistics regarding those exchange members which execute a plurality of their trading volume on each exchange. The three exchanges with the largest number of tiers on their pricing schedules have an average of 41.8% of their members executing at least a plurality of their trading volume on the exchanges. This is in contrast with the 3 exchanges with no tiering for which 11% of members, on average, execute a plurality of their orders on their exchanges. Restricting to those exchanges with price tiering, the three exchanges with the lowest number of tiers have an average of 4.26% of their members sending them a plurality of order flow. Three exchanges (NYSE National, BX, LTSE) did not have any members with a plurality of their trading volume on the exchanges and for three other exchanges (Phlx (PSX), NYSE American, and NYSE Chicago) the only members which execute a plurality of their orders on those exchanges do so only because they did not execute any order flow on any other exchange.[148] Moreover "plurality members" constitute a greater share of the total exchange trading volume for exchanges with more tiers relative to those with fewer tiers. The measure of correlation between

147 Aside from order flow concentration, higher rebate/lower fee pricing tiers could increase trading volume and therefore market share by incentivizing the submission of limit orders which would have otherwise not been submitted absent the tiers.

148 A plurality member is defined for a particular exchange as a member who executes the largest share (a plurality) of their order flow on that exchange. If a broker-dealer is a member of only one exchange they are necessarily a plurality member of that exchange since 100% of the order flow they execute across all the exchanges (for which they are a member) occur on that exchange.

the number of pricing tiers and the share of exchange volume from plurality members is 0.64. For exchanges with above median number of tiers (>11) an average of 19.56% of their total trading volume originate from plurality members whereas for exchanges with less than/equal to the median number of tiers (<=11) is 1.46%. The average proportion of plurality member trading volume for the three largest exchanges by number of tiers, 41.8%, is roughly 20 times the average for every other exchange, 2.01%.

It is important to note that these observations do not prove a causal relationship between tiering and market share and the Commission acknowledges that there may exist other factors that could drive the patterns observed. For instance, it may be the case that maintaining a complex pricing schedule may be costly and, as a result, exchanges with larger market shares may find it more feasible to employ a pricing schedule with more tiers than an exchange with a smaller market share. Another reason for differences in market share across exchanges could be the widely documented fact that stocks trade more heavily on their primary listing venue particularly with respect to trading at the close.[149]

The following analysis directly measures the degree of concentration for the order flow of individual members and examines how they deviate from a market benchmark on average. The Herfindahl-Hirschman Index (HHI) is employed to gauge the degree to which each individual exchange member diversifies or concentrates its order flow across the exchanges of which it is a member. The HHI is widely used for measuring market concentration or dispersion.[150] Member HHIs are computed based on the relative order flow dispatched to the

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149 See Maureen O'Hara, and Mao Ye "Is Market Fragmentation Harming Market Quality?", 100 J. FIN. ECON. 459 (2011).

150 The HHI is generally calculated as the sum of squared weights which normally add up to one. The HHI ranges from (0,1) with lower values indicating a more even split between the constituent weights and higher values indicative of a more uneven distribution with a max value of one indicative of a single entity

exchanges by the individual exchange member. This calculation is performed for each exchange member's principal orders, the combination of agency and riskless principal orders, as well as their overall order flow.

The concept of a "pro-rata HHI" is introduced to serve as a benchmark which encapsulates the inherent disparities in market shares among exchange. As with the member HHI, a pro-rata HHI is computed for each individual exchange member and category of order flow using the relative market shares of exchanges, this contrasts with the member HHI computation which is calculated with the relative share of the member's order flow. The pro-rata HHI has a straightforward interpretation; it reflects what an individual member's HHI would have been had it distributed its order flow across its member exchanges in proportion to their relative market shares.[151]

Deviations in the share of order flow routed to an exchange from the relative market weight can either contribute to increasing or decreasing member HHI relative to the pro-rata HHI.[152] Most order flow deviations which contribute to higher order flow concentration are associated with maker-taker exchanges with more pricing tiers and these deviations are positive and of larger magnitude relative to those of other exchanges. In contrast, deviations in order

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with a 100% weight. Conditional on the number of entities N, the lowest possible HHI value is 1/N which corresponds to the case when all weights are equal to one-another (equal to 1/N).

151 To illustrate the computation of member and pro-rata HHIs consider the case of a broker-dealer that directs principal orders to three different exchanges they are a member of. If the broker-dealer sends 60% of their principal order flow to one exchange and 20% to each of the other two, then the broker-dealer's member HHI for their principal orders be 0.44 ($0.60^2 + 0.20^2 + 0.20^2$). If the relative market share for the exchanges, using the executions of principal orders, are 30%, 30%, and 40% then the pro-rata HHI would be 0.34. In this case because the member HHI of 0.44 is greater than the pro-rata HHI of 0.34, then the member concentrates their order flow to a greater degree than would be expected had they routed their order flow in accordance to exchange size.

152 Overall, the executed member order flow was more concentrated relative to the pro-rata HHI. For the month of Jan. 2023, the volume-weighted average pro-rata HHI was 0.18 whereas the volume-weighted average member HHI was 0.20.

flow which contribute to lower HHI measures tend to be negative for the maker-taker exchanges with the highest number of pricing tiers and are positive for the other exchanges. This is to say that when broker-dealers concentrate their order flow, they tend to increase the share of order flow sent to those exchanges with more pricing tiers, consistent with the notion that tiering promotes the concentration of order flow. Table 6 reports each exchange's share of the total order flow deviations which either increase or decrease concentration and the volume-weighted average size of the deviation for each exchange.

Table 6 - Order flow deviation from relative market weights and shares of deviating order flow

The following table splits deviations in exchange member order flow from their relative market benchmark into those which increase or decrease member order flow concentration using the sample of CAT data for the month of Jan. 2023 described in Table 4.[a] Member order flow share is calculated as the number of shares executed by an exchange member in any capacity (e.g. principal, agency, riskless principal) during regular trading hours over the month of Jan. 2023 divided by the total number of shares the exchange member executed across all national stock exchanges during regular trading hours over the month of Jan. 2023. The share volume-weighted average deviation (in percentage points) for deviations which increase concentration and decrease concentration are reported under columns "Avg Deviation From Market", this is the difference between the percentage of order flow sent to the exchange by members and the relative market share of that exchange for that member. Columns titled "Share of Deviating Flow" denotes the share of total deviating order flow which either increases or decreases member concentration.

			Increase Concentration		Decrease Concentration	
	Exchange	# of Tiers	Avg Deviation From Market	Share of Deviating Flow	Avg Deviation From Market	Share of Deviating Flow
Maker-Taker	NYSE	93	13.2%	20.7%	-3.7%	15.3%
	NSDQ	74	19.2%	39.8%	-4.8%	50.6%
	ARCA	72	7.4%	13.4%	-3.3%	14.2%
	BZX	26	2.3%	3.9%	-1.6%	0.9%
	EDGX	19	9.3%	11.9%	-2.8%	6.8%
	MEMX	13	3.2%	3.7%	1.2%	0.6%
	AMER	10	-0.2%	0.0%	1.7%	0.4%
	PEARLEQ	8	2.3%	0.3%	2.9%	2.8%
	PSX	4	3.4%	0.3%	6.0%	1.9%
Non Maker-Taker	BX	20	-0.3%	0.0%	1.7%	0.5%
	NSX	11	-0.5%	0.0%	2.7%	1.2%
	BYX	11	-0.6%	0.1%	2.2%	1.8%
	EDGA	8	3.6%	1.2%	1.9%	1.2%
	IEX	0	7.4%	4.8%	1.9%	1.7%

CHX	0	-0.1%	0.0%	1.0%	0.1%
LTSE	0	0.0%	0.0%	0.0%	0.0%

[a] For each exchange member (index *i*) a deviation from the relative market weight for an exchange (index *j*) is defined by the difference $d_{ij}=S_{ij}-M_{ij}$ where S_{ij} denotes the share of member order flow and M_{ij} denotes the relative market weight. Share of member order flow S_{ij} is calculated as the order flow executed by the member *i* on exchange *j* divided by the total order flow executed by member *i* across all the exchanges they are a member of. The relative market weight M_{ij} is calculated as the total order flow executed on exchange *j* divided by the sum of total order flow executed across all the exchanges for which *i* is a member. N_i denotes the number of exchanges that the exchange member *i* is a member of. Conditional on $M_{ij}>1/N_i$, a deviation d_{ij} contributes to a decreased member HHI if $2(M_{ij}-1/N_i)<d_{ij}<0$ and increases it otherwise. Conditional on $M_{ij}<1/N_i$, a deviation d_{ij} contributes to a decreased member HHI if $0<d_{ij}<2(M_{ij}-1/N_i)$ and increases it otherwise. In the case $M_{ij}=1/N_i$ then any deviation $d_{ij}>0$ would contribute to a greater member HHI. The size of a deviation is calculated as the product between the deviation d_{ij} and total share volume member *i* executed on the exchange.

3. Routing Incentives and Potential Conflicts of Interest

In the case of agency-related volume the use of volume-based pricing tiers by exchanges introduces a potential conflict of interest between exchange members and their non-member customers without exchange access. Volume-based pricing for agency order flow may give exchange members an incentive to route customer order flow to certain exchanges for the purposes of tier qualification rather than maximizing other aspects of execution quality. The Commission finds evidence that agency and riskless principal order flow is overall more concentrated than principal order flow; however, relative to the relevant benchmark HHI, principal order flow is more concentrated.[153] However, Commission analysis suggests that the lower principal concentration is due in part to less concentration in marketable orders compared to similar agency-related order flow.[154] Additionally concentration of order flow may not always

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153 The overall member HHIs for principal order flow is 0.21 whereas it is 0.24 for agency+riskless principal order flow; relative to their benchmark pro-rata HHI the principal member HHI is 31% greater whereas agency member HHI is 11% greater than its benchmark. See infra Table 7. The benchmark pro-rata HHIs differ between the two since the principal pro-rata HHI is computed using relative market weights taking only into account principal orders whereas the relative market weights used for the agency pro-rata HHI are computed using only agency or riskless principal order flow. For a more detailed discussion of the calculations of member and pro-rata HHIs see supra section IV.B.2.

154 The Commission finds that the member HHI for principal order flow computed using only liquidity taking orders was 0.19 whereas it was 0.24 for agency order flow. When member HHI is calculated using only liquidity making orders it was 0.24 for principal order flow and 0.26 for agency order flow.

be contrary to customer interests. It is therefore unclear if differences in order flow concentration between principal and agency order flow are attributable to broker-dealers acting on the conflict of interest.

The potential for a conflict of interest emerges since broker-dealers can typically enjoy the benefits of the qualifying for a better pricing tier as a result of concentrating customer order flow without having to internalize the costs of that concentration.[155] Exchange members directly benefit from qualifying for a better tier since the preferential pricing would not only extend to their own principal orders but would also improve their ability to attract more customer flow by allowing them to pass through more savings. The concentration of agency order flow has the potential to be costly to the customers of exchange members if it comes at the cost of other factors of execution quality such as fill rates, time to execution, the availability of better-priced liquidity, and the likelihood of being adversely selected, each of which may vary across exchanges. However, it may not always be the case that concentration for the purpose of tier qualification comes at the expense of the customer, particularly if the member passes through large proportions of the cost savings from the tier qualification, then the reduction in costs for customers may on-balance leave the customer better off.

In contrast, when exchange members trade for their own account using principal orders, the incentives of the members are more straightforward. A member can choose to route an order

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155 Contracting solutions/payment arrangements between a broker and its customer may mitigate but not fully eliminate the incentive conflict. Investors may have difficulty in fully assessing execution quality, and broker-dealers may sacrifice execution quality on agency order flow, especially in situations where firms have concentrated sufficient principal order flow on an exchange to be near top-tier thresholds. If additional agency flow helps the broker-dealer cross the threshold for achieving a desirable tier, the broker-dealer has an incentive to direct agency orders to the exchange. In doing do, the broker-dealer could be trading off limit order execution quality for agency orders and potential rebate revenue for both agency and principal orders. Meanwhile, investors typically only partially accrue the rebates/transaction fees on agency orders under negotiated arrangements with their brokers.

to a particular exchange primarily out of a desire to make a profitable trade or to concentrate order flow and obtain a volume discount at its own discretion.[156]

Results from relevant academic research suggest that routing customer order flow in a rebate maximizing manner comes at the cost of execution quality. Brokers routing limit orders may also be motivated by liquidity rebates. Different sources document that limit order execution quality tends to be lower on exchanges with high take fees and low make rebates.[157] Execution quality can be measured along the different dimensions of fill rates, execution speeds, realized spreads, and adverse selection costs. Higher access fees tend to be associated with lower fill rates and execution speeds for non-marketable orders, and standing limit orders directed to high take-fee exchanges tend to face greater adverse selection costs.[158] One academic paper makes the claim that brokers typically route customer limit orders to exchanges where the broker will receive a rebate and that the rebate is typically not passed on to the customer.[159] Another study examining four high volume retail brokers which appear to route all nonmarketable limit orders in a manner consistent with maximizing rebates find that the expected rebate revenue offered by high take-fee venues may be insufficient to justify the opportunity cost, or potential loss in execution quality concurrently available on low take-fee venues.[160]

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[156] The member would still be subject to certain restrictions such as the Order Protection Rule.

[157] See Costis Maglaras, Ciamac Moallemi, and Hua Zheng, "Optimal Execution in a Limit Order Book and an Associated Microstructure Market Impact Model," (working paper May 13, 2015), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2610808 (retrieved from SSRN Elsevier database).

[158] Execution quality of non-marketable orders decreasing on exchanges with high take-fees is expected as liquidity takers tend to route their marketable orders to venues with the lowest take fees, all else equal.

[159] See James J. Angel, Lawrence E. Harris, and Chester S. Spatt, "Equity Trading in the 21st Century", 1 Q. J. FIN. 1 (2011).

[160] See Robert Battalio, Shane Corwin, and Robert Jennings, "Can Brokers Have It All? On the Relation between Make-Take Fees and Limit Order Execution Quality", 71 J. FIN. 2193 (Oct. 2016).

Member broker-dealers may have an incentive to profit to the detriment of the customer by choosing to concentrate agency orders onto a limited number of specific exchanges not because routing to those specific exchanges is necessarily in the interests of the customer but rather to increase the member's chances of qualifying for a particular volume-based pricing tier without necessarily passing some or all of the benefits of doing so back to the customer.[161]

There are forces in the market for equity brokerage services that serve to limit the extent to which this conflict of interest can alter behavior. For example, because of the Order Protection Rule, a broker-dealer looking to concentrate order flow on a particular exchange could not do so if doing so resulted in trading through the NBBO. In addition, the Commission understands that it is common for some institutional customers to monitor their broker-dealers on a trade-by-trade basis which would be expected to influence order routing decisions.

Table 7 - Exchange Member and Pro-rata HHI For Overall, Agency or Riskless Principal, and Principal Order Flow

This table uses a sample of CAT data of NMS stocks traded on the national equities exchanges for Jan. 2023 and reports share volume-weighted measures of market and member HHI values using all, agency-related, and principal order executions.[a] See Table 4 for a description of how exchange members are identified as well as how agency, riskless principal, and principal transactions are identified. The table also reports the percentage difference between member and pro-rata HHIs; this is calculated as the difference between the member HHI and pro-rata HHI divided by the pro-rata HHI. Also reported are the share volume-weighted average HHI measures for different order capacities using only liquidity taking orders (Remove) and liquidity making orders (Add). The CAT liquidity categories specify if the side of the trade was adding or removing liquidity. As the HHI measurement is influenced by the number of entities involved in its calculation, market and member HHIs are also separately calculated among broker-dealers who are members of many (>10) and few (<=10) exchanges.

	Order Capacity	Pro-rata HHI	Member HHI	% Difference	HHI (Remove)	HHI (Add)
Overall (100%)	All	0.18	0.20	16%	0.18	0.23
	Agency Or Riskless Principal	0.22	0.24	11%	0.24	0.26

161 See supra note 155.

	Principal	0.16	0.21	31%	0.19	0.24
> 10 Exchanges (95%)	All	0.16	0.18	14%	0.16	0.20
	Agency Or Riskless Principal	0.18	0.20	11%	0.19	0.22
	Principal	0.15	0.19	32%	0.18	0.22
<= 10 Exchanges (5%)	All	0.48	0.61	27%	0.57	0.61
	Agency Or Riskless Principal	0.69	0.78	12%	0.76	0.79
	Principal	0.38	0.48	29%	0.45	0.49

[a] For a more detailed discussion of the calculations of member and pro-rata HHIs see section IV.B.2

Table 7 reports the volume-weighted average market and member HHIs derived from the individual exchange members. Consistent with section IV.B.2, individual members appear to be more concentrated (0.20) than would be expected by the relative market shares of the exchanges (0.18). Both market and member HHIs computed using agency or riskless principal trades are greater than they are when using only principal order flow in absolute terms. However, when measured relative to their benchmarks, agency related member HHI is only 11% greater than the pro-rata HHI whereas principal member HHI is 31% greater.[162] Broker-dealers typically have more discretion when routing non-marketable orders since the routing of non-marketable orders is not directly constrained by the Order Protection Rule. Therefore, the fact that the difference between agency-related and principal HHIs appears to be smaller when only considering the execution of non-marketable limit orders suggests that the observed differences in concentration between agency-related and principal order flow may not be driven by routing decisions taken where broker-dealers have the most discretion.

162 A possible explanation of this could be that there may be a greater degree of correlation between agency trading decisions than between trading principal trades.

As the HHI measurement is influenced by the number of entities involved in its calculation, market and member HHIs are separately calculated among broker-dealers who are members of many (>10) and few (<=10) exchanges. This approach ensures a more accurate representation of market concentration since the average HHI could be skewed by instances where the member HHI is calculated over a low number of exchanges. For instance, the HHI will, by definition, be equal to one when the broker-dealer is a member of a single exchange meaning that 100% of its order flow is executed on that single exchange.[163] Consistent with this, Table 7 shows that the various HHI measures are generally greater when calculated for broker-dealers with 10 or fewer exchanges of which they are a member. For the subset of broker-dealers with 10 or fewer exchanges the differences between principal and agency concentration measures are greater.

While agency-related order flow appears to be more concentrated than principal order flow it deviates less from its respective benchmark pro-rata HHI measure than principal order flow. This result suggests that the broker-dealers who concentrate their principal order flow do so on a greater variety of venues whereas agency order flow across broker-dealers should concentrate more on the same exchanges across broker-dealers.[164] As the pro-rata HHI encapsulates commonalities in the distribution of order flow, larger deviations from the pro-rata HHI suggest that distribution of order flow is less dependent on those commonalities. For this

[163] It is worth noting that a broker-dealer can still route orders through to an exchange of which it is not a member but would have to do so through an intermediary which is a member of the target exchange, and that order flow would count towards the trading volume of the intermediary member rather than the original broker-dealer.

[164] If broker-dealers all choose to concentrate order flow in the exact same proportions on the same choice of exchanges, then the market and member HHI would be equal. If instead broker-dealers chose to concentrate their order flow on different exchanges then the difference between market and member HHI would be large.

reason, the Commission believes principal order flows are likely to be more responsive to any changes in the market.

4. The Market to Provide Exchange Access

Broker-dealer exchange members compete to provide access to the exchanges for investors, as well as for proprietary traders and other broker-dealers who give up orders to an exchange member. There is significant variation in the size of the exchange members, as measured by total order flow. In each of these markets, volume-based transaction pricing for agency-related volume may provide a competitive advantage to the larger exchange members.

a. The Current Effect of Volume-Based Tiers on the Market for Broker-Dealer Services

The tiered transaction pricing schedules create competitive advantages for high-volume broker-dealers in the market to provider brokerage services to investors. These tiered schedules may also be contributing to a trend of increased concentration in the executing broker industry.

The current equities exchange tiered transaction pricing schedules create differences in the fees and rebates applied across members. Tiered transaction pricing currently affords high-volume broker-dealers substantially cheaper trading, placing them at a competitive advantage over the smaller firms. One commenter suggested that "[a] smaller firm's trading costs for any given trade on an exchange may be 30% or more of the costs of a larger competitor – for the exact same trade."[165] Lower-volume exchange members may be providing a subsidy for a handful of the high-volume members.[166] One exchange group suggested that its highest volume

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165 Letter from Tyler Gellasch, President and CEO, Healthy Markets Association to Mr. Brent J. Fields, Secretary, Commission, dated Nov. 13, 2018, at 5 ("Healthy Markets 2018 Letter"), available at https://www.sec.gov/comments/s7-03-20/s70320-7235195-217095.pdf.

166 See, e.g., Chester Spatt, "Is Equity Market Exchange Structure Anti-Competitive?" at 7 (Dec. 28, 2020) available at https://www.cmu.edu/tepper/faculty-and-research/assets/docs/anti-competitive-rebates.pdf and

members receive rebates exceeding the trading fees, data, and connectivity fees combined.[167] A representative of one exchange group has stated that "[there are just the] top 10 firms across our four exchanges by market share. […] Five of the top 10 get a check from us after the costs of their connectivity and market data. So we are cutting them a check monthly after their costs. [… At the same time, the] top 10 firms on our exchange eat up 50 percent of the capacity on our exchanges."[168] While the highest volume traders are either trading at heavily discounted rates or making a profit from exchange transaction rebates, the revenue to supply such discounts may come, in part, from lower-volume broker-dealers who do not qualify for volume discounts.[169]

There has been increased concentration in the executing broker industry in recent years.[170] A number of factors may be contributing to this trend. According to an industry source, data and connectivity costs have been trending upwards,[171] which increases the fixed costs of being an executing broker. In contrast, broker commission pools and rates that have long been in decline because, as some broker-dealers have become more efficient through automating most trades, competition for customers forced other broker-dealers to streamline or

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at 5 (describing rebate pricing tiers based upon relative volume as "advantaging large vs. small brokers" and citing a letter from the Honorable Ted Budd, the Honorable Alex Mooney, and the Honorable Ann Wagner, Congress, to Chairman Jay Clayton, Commission, dated Jan. 31, 2020 for its criticism of the role of pricing tiers in disadvantaging small brokers), and Healthy Markets 2018 Letter, supra note 165, at 5, observing that as lower-volume and medium-sized exchange members pay relatively higher transaction fees (and receive relatively lower rebates), they may be cross-subsidizing the exchange transaction pricing benefits enjoyed by high-volume broker-dealers. The sentiment that the only high-volume exchange member's transaction prices are heavily subsidized is also expressed by IEX in "Why Exchange Rebate Tiers are Anti-Competitive", available at https://www.iex.io/article/why-exchange-rebate-tiers-are-anti-competitive.

167 Chester Spatt, "Is Equity Market Exchange Structure Anti-Competitive?", supra note 166, at 7.

168 Remarks of Chris Concannon, supra note 3, Transcript at 74-75.

169 Healthy Markets 2018 Letter, supra note 165, at 5.

170 Norges Bank comment letter "Re: Notice of Proposed Rule on Market Data Infrastructure, Securities Exchange Act Release No. 88216 (Feb. 14, 2020) (File No. S7-03-20)", dated July 15, 2020, at 3, available at https://www.sec.gov/comments/s7-03-20/s70320-7422691-219826.pdf.

171 See Securities Industry & Financial Markets Association, An Analysis of Market Data Fees, available at https://www.sifma.org/resources/general/an-analysis-of-market-data-fees/.

offer price cuts.[172] In addition, high-volume broker-dealers may be better positioned to attract customers through performance along dimensions other than commission. For example, high-volume broker-dealers may be better equipped with algorithmic tools and other technologies that facilitate execution quality, or they may be better positioned to bundle execution services with other offerings, such as research. According to one survey from 2021, because of the large brokers' various perceived strengths, 28% of buy-side asset managers anticipate doing more business with high-volume brokers versus only 10% who expected less.[173] In sum, increasing concentration in the broker/dealer space hints at competitive pressure to constrain fees and "barriers to entry based on necessary scale to be able to absorb the fixed costs of infrastructure, market data and connectivity."[174] The number of registered broker-dealers declined by over 20% between 2015 and 2022, or by close to 1,000 from an initial value of 4,450 in 2022.[175] The decline in the number of broker-dealers is consistent with the Commission's understanding that the broker-dealer community has seen no salient growth of nascent firms in recent years. Volume-based transaction pricing may further contribute to this trend of increased concentration. Under volume-based exchange transaction pricing, the top volume broker-dealers' lower trading costs give them an advantage when competing for customers against smaller members.[176]

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172 See U.S. Institutional Equity Trading Study (Feb. 2021), available at https://assets.bbhub.io/professional/sites/10/2021_02-Market-Structure-Buyside-Survey-US.pdf.

173 See id.

174 Norges Bank comment letter "Re: Notice of Proposed Rule on Market Data Infrastructure, Securities Exchange Act Release No. 88216 (Feb. 14, 2020) (File No. S7-03-20)", dated July 15, 2020, at 3, available at https://www.sec.gov/comments/s7-03-20/s70320-7422691-219826.pdf.

175 See U.S. Securities and Exchange Commission Fiscal Year 2024 Congressional Budget Justification, available at https://www.sec.gov/files/fy-2024-congressional-budget-justification_final-3-10.pdf, which reports there being 3,538 registered broker-dealers in 2022 which is down from the 4,450 registered broker-dealers in 2015. See U.S. Securities and Exchange Commission Fiscal Year 2015 Congressional Budget Justification, available at https://www.sec.gov/about/reports/secfy15congbudgjust.pdf.

176 The use of relative volume thresholds based on total consolidated volume reinforces the transaction pricing advantages of high-volume broker-dealers. If exchange transaction pricing qualifications were based on

Specifically, investments in infrastructure (e.g., trading algorithms), connectivity (low versus high latency), and market data tend to be fixed costs that do not scale in proportion of trading volume. High-volume broker-dealers tend to have lower trading costs, in part due to volume-based pricing, which better position them to offer lower commissions or fees.[177] If these lower fees allow them to attract greater order flow from customers and non-member broker-dealers, they will be able to attain more favorable pricing tiers. Thus, volume-based transaction discounts create a self-reinforcing cycle that amplifies the competitive advantage of the members with the highest existing volumes. This self-reinforcing cycle may be further exacerbated to the extent to which lower-volume exchange members, or their customers, find it more economically viable to route orders through a higher volume exchange member which can qualify for more preferential pricing tiers. Some observer(s) express concern that volume-based exchange transaction pricing that favors the high-volume broker-dealers helps to erect significant barriers to entry for lower-volume broker-dealers.[178]

Broker-dealers may be motivated to offer lower commission fees or partially pass through their transaction price advantages, in part because certain classes of investors are sensitive to changes in their trading costs or cum-rebate commission rates. Lower broker commission rates may provide incentives for sell-side institutional customers to place more

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absolute volume thresholds, it could increase the number of lower-volume members that benefit from rebates. In contrast, relative volume qualifications effectively put broker-dealers in a race against each other.

177 For example, hedge funds that trade large volumes would be directly impacted by the size of exchange transaction rebates if they have negotiated pass-through arrangements with the sell-side broker-dealers they use to access exchanges, through which they pay on a "cost plus" basis. Since the exchange transaction rebates would flow back to these investors, higher exchange rebates incentivize hedge funds to direct order flow to the top-tiered broker-dealers.

178 One lower-volume broker-dealer's expressed concerns to the Commission that the decrease in the number of brokers is reflective of the lower-volume broker-dealers' inability to qualify for better volume discounts. Healthy Markets 2018 Letter, supra note 165, at 5.

orders through the broker-dealer providing liquidity, as opposed to pursuing other strategies such as taking liquidity, posting the same order on dark pools, or using special order types. Likewise, proprietary trading firms are known to change their trading patterns with changes in broker commission rates. One reason for their commission price responsiveness, the Commission understands, is that some active proprietary trading firms may profit from exchange transaction rebates on some exchanges. Comparing the relative sizes of exchange transaction rebates and broker commissions, average broker commissions tended to range from 0.65 to 2.67 cents per share in 2020.[179] Since the base tiers for exchange rebates tend to be capped at roughly 0.3 cents per share, exchange transaction rebates for high-volume broker-dealers could be more than 10 percent of average commissions. Considering that exchange transaction rebates from high-volume members can be non-trivial compared to the average broker commissions, high-volume broker-dealers may effectively attract order flow by sharing portion of the rebates or offering lower commissions. While the current trend of consolidation may be concurrent with lower prices for investors and better service, increased market power among the high-volume broker-dealers could eventually lead to increased costs for investors. When the dominance of high-volume broker-dealers becomes sufficiently heightened, it is conceivable that dominant broker-dealers may eventually choose to exercise market power more aggressively. As a manifestation of the more general principle that a monopoly (or players with market power) tends to charge prices higher than what is socially optimal, large broker-dealers may raise commission fees. Doing so may result in a decline of trading volume facilitated by broker-dealers and a shrinkage of total surplus across investors.

179 See U.S. Institutional Equity Trading Study (Feb. 2021), available at https://assets.bbhub.io/professional/sites/10/2021_02-Market-Structure-Buyside-Survey-US.pdf.

b. The Market to Provide Exchange Access to Non-Member Broker-Dealers

Substantial differences in the exchange transaction pricing applicable across members with different volume echoes in the dramatic difference in size across those members. One measure of the dispersion of trading activities across members on an exchange is the coefficient of variation, applied to shares executed or total dollar volume. The coefficient of variation for member-level shares summarizes the standard deviation of firm's total monthly shares relative to the average across members on an exchange. The coefficient of variation, or ratio of standard deviation to mean, ranges from 1.6 to 2.45 across the 16 exchanges for the month of January 2023. The coefficient of variation, applied to total dollar volume defined as shares times trade price, ranges from 1.48 to 3.11 across exchanges for the same month. For both measures of dispersion, the ratios suggest that the standard deviation of dollar volume is as large as the mean across all firms. Moreover, the standard deviation of dollar volume across members can be 3 times as large as within-exchange average.

Higher rebate earned enables the largest exchange members to attract a disproportionate share of order flow from non-members, further exacerbating their competitive advantage over smaller exchange members. Pricing arrangements for non-member's exchange access services can be "cost plus", meaning that all or a portion of the access fee and rebates get passed on to non-members, with an additional fee for connecting to an exchange. Competition among direct market access ("DMA") providers constrains the fee for non-members' exchange access to a narrow band of 0.5 to 2 mils per share, and one source suggests that DMA providers may offer the service free.[180] Considering that top tiers across exchanges lead to rebates exceeding 3 mils, the cost for direct market access may be modest compared to the highest rebates and justifies non-members' decisions to route through the largest exchange members. Large exchange members' market power in DMA provision amplifies their competitive advantage over smaller exchange members, as the added liquidity accrued from non-members helps the exchange members achieve even more favorable tiers.

In addition to competing for order flow from investors, broker-dealers also compete to provide sponsored access to exchanges for other entities, such as broker-dealers or proprietary traders. Executing broker-dealers also compete to receive order flow from other brokers who do not interact with the exchanges themselves. Through direct market and sponsored access services, investors and other lower-volume broker-dealers choose to route orders through high-volume broker-dealers. Among the benefits from doing so,[181] the current exchange transaction price tiers allow the lower-volume broker-dealers to share in some or all of the volume-based tiers of high-volume broker-dealers if they receive pass-through exchange transaction pricing, subject to the costs they pay to the sponsor for those services. Thus, within these markets, high-volume broker-dealers have certain competitive advantages over lower-volume broker-dealers that helps to account for their size. While a number of factors are involved, volume-based transaction pricing for agency-related volume contributes to the competitive advantages of high-volume broker-dealers.

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[180] See Daniel Aisen, "Connecting to the Stock Market (Choosing a DMA Partner)" (Mar. 2021), available at https://medium.com/prooftrading/connecting-to-the-stock-market-choosing-a-dma-partner-9176ccd3ce84 ("[i]t's gotten to the point where if you trade a fair amount of volume, you can probably find a good DMA provider who will offer you the service for free […]").

[181] See supra section IV.B.4.b for a discussion of the benefits for small broker-dealers to send orders via high-volume exchange members.

One reason that lower-volume broker-dealers and proprietary traders that are not broker-dealers may rely on the broker-dealers that are exchange members to provide access and connectivity to exchanges is the substantial fixed costs associated with exchange connectivity and data. Market data and connectivity fees, together with exchange membership, have increased substantially in recent years and can be significant enough to raise entry cost concerns.[182] While the cost to maintain exchange membership tends to fall between $5,000 and $10,000 on the exchanges with the largest market share, proprietary exchange market data fees and fees for the most closely-connected connectivity to the exchange's matching engine can range from thousands to tens of thousands or more per month.[183] One study reports that the fees for depth of book data on some exchanges have increased more than tenfold from 2010 to 2018,[184] while a commenter on a proposed exchange fee stated in 2016 that fees for connectivity and co-location have also escalated during an overlapping time period.[185]

Moreover, high-volume exchange members' size and scale affords them the resources that permit them to hire the expertise required to develop and use the smart order routing

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182 Norges Bank comment letter "Re: Notice of Proposed Rule on Market Data Infrastructure, Securities Exchange Act Release No. 88216 (Feb. 14, 2020) (File No. S7-03-20)", dated July 15, 2020, at 3, available at https://www.sec.gov/comments/s7-03-20/s70320-7422691-219826.pdf.

183 Exchanges can extract more profits from data sales by offering "low-latency" access to data feeds, such as additional monthly fees for the opportunity to co-locate their computers in physical proximity to the exchange's own computer. This practice is known as "co-location", and co-location fees alone can cost traders tens of thousands per month. See New York Stock Exchange's Connectivity Fee Schedule, available at https://www.nyse.com/publicdocs/Wireless_Connectivity_Fees_and_Charges.pdf. Co-location fees are separate from fees for accessing individual exchange's proprietary data, which can amount to thousands per month. See An Analysis of Market Data Fees (Aug. 2018), available at https://www.sifma.org/wp-content/uploads/2019/01/Expand-and-SIFMA-An-Analysis-of-Market-Data-Fees-08-2018.pdf. According to IEX's description of its market data fees, the maximum monthly cost for "low-latency" (super-fast) data subscription is around $3,500. IEX's report on its market data fees is available at https://www.sec.gov/rules/sro/iex/2022/34-96331.pdf.

184 See An Analysis of Market Data Fees (Aug. 2018), available at https://www.sifma.org/wp-content/uploads/2019/01/Expand-and-SIFMA-An-Analysis-of-Market-Data-Fees-08-2018.pdf.

185 See Letter from David L. Cavicke, Chief Legal Officer, Wolverine Trading LLC, Wolverine Execution Services LLC, and Wolverine Trading Technologies LLC to Mr. Brent J. Fields, Secretary, Commission, dated Dec. 23, 2016.

technologies necessary to trade competitively in the NMS stock market. Lower-volume market participants may lack the economies of scale to operate their own smart order routers, and may need to purchase those services from the high-volume broker-dealers that are exchange members. Some proprietary traders and lower-volume broker-dealers, who may otherwise be deterred from becoming members of and trading directly on the exchanges, can benefit from the high-volume exchange members' access and sophisticated systems, and may otherwise find it difficult to grow their business or to compete on equal terms with those members.

Another reason behind lower-volume broker-dealers' and proprietary traders' reliance on exchange members may be that the smaller firms cannot individually qualify for the fee and rebate levels that exchanges offer to their high-volume exchange members. Rather than becoming members of and trading directly on exchanges, the smaller firms can benefit from sending orders to exchanges via high-volume exchange members to share in a portion of the larger members' volume-based pricing advantage, subject to any costs or commissions.[186] It is likely that volume-based transaction pricing creates an advantage for the high-volume broker-dealers in attracting such order flow. Because high-volume broker-dealers tend to qualify for the highest tiers, they effectively have lower costs when offering sponsored access or execution services to other brokers. Competition among these sponsored access and direct market access providers constrains the fee for non-member's exchange access to a narrow band of 0.5 to 2 mils per share, and some providers may offer the service for less.[187] Considering that top tiers across

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[186] For example, pricing arrangements between members and non-members for sponsored and direct market access services can be "cost plus," meaning that the sponsoring broker-dealer passes through to the non-member customer all or a portion of the exchange transaction fees and rebates for which it qualifies, with an additional fee charged for connecting to an exchange. A sponsoring member whose total volume qualifies for a high tier would have more to offer through such arrangements than a lower-volume member. See Daniel Aisen, "Connecting to the Stock Market (Choosing a DMA Partner)" (Mar. 2021), available at https://medium.com/prooftrading/connecting-to-the-stock-market-choosing-a-dma-partner-9176ccd3ce84.

[187] See id.

exchanges lead to rebates exceeding 30 mils, nonmembers' cost for direct market access may be modest compared to the highest rebates and potential cost savings achieved. As with the market to provide broker-dealer services to investors, these lower costs lead to more volume from non-members. The broker-dealer is more able to qualify for the best tiers, further lowering costs and exacerbating its competitive advantage over lower-volume exchange members.

c. The Dispersion of Member Broker-Dealer Size

The fact that there are a range of different sizes by order volume for exchange members is an assumption that enters into the analysis that the Commission is presenting on the economic effects of the proposed rule. In this section, the Commission presents analysis showing the existence of such a dispersion in broker-dealer size.

One measure of the dispersion of trading activities across members on an exchange is the coefficient of variation, applied to shares executed or total dollar volume. The coefficient of variation for member-level shares summarizes the standard deviation of firm's total monthly shares relative to the average across members on an exchange. The coefficient of variation, or ratio of standard deviation to mean, ranges from 1.6 to 2.45 across the 16 exchanges for the month of January 2023. The coefficient of variation, applied to total dollar volume defined as shares times trade price, ranges from 1.48 to 3.11 across exchanges for the same month. Both measures of dispersion suggest that the distribution of member's trading level has considerable variability about its exchange's mean, with the standard deviation of dollar volume being as large as the mean across all exchanges. Moreover, the standard deviation of dollar volume across members can be 3 times as large as within-exchange average.

For further evidence of the large disparities in trading activities across broker-dealers, one can compare order volume of exchange members at the 25^{th} percentile and at the 75^{th} percentile on each exchange. For trading activities measured by shares executed in the month of

January 2023, shares from exchange members at the 25th percentile can be as little as less than 1% of the shares from members at the 75th percentile on a single exchange. The proportion of exchange order flow attributable to members between the 25th percentile and 75th percentile is no more than 12 percent on each exchange. Comparable ranges apply to trading activities measured by a member's total dollar volume defined as shares times trade price. Comparing the ratios of the 25th percentile to 75th percentile across exchanges, dollar volume from the exchange member at the 25th percentile is as small as less than 1% and no greater than 12% of dollar volume at the 75th percentile. When one restricts the analysis of order flow to liquidity-adding activities on maker-taker exchanges, order flow is similarly concentrated. On several exchanges, the member from the 25th percentile of the dollar volume (or shares) distribution executed trades that are less than 1% of the dollar volume (or shares) of the 75th percentile member on the same exchange. Across exchanges, the ratio of the 25th to 75th percentile trading activities is no more than 10%. The substantial differences in trading activities between high-volume and the tail of lower-volume exchange members are consistent with an earlier observation that the broker-dealer space is highly concentrated.[188]

5. Lack of Tier Transparency

There is no public transparency about the number of firms that qualify for the different tiers across exchange transaction pricing schedules. This lack of transparency may limit the ability of members, other exchanges, and the public to submit informed comment on exchange pricing proposals and draw conclusions about the effects of all exchange transaction pricing including volume-based transaction pricing tiers. Knowing how many exchange members qualify for different pricing tiers would provide interested parties with insight into how the costs

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188 See supra section IV.B.4.a.

and benefits afforded by volume-based tiers are distributed across exchange members. This knowledge would allow market participants to submit more informed comments to the Commission by allowing them to better compare the pricing they receive to their competitors and better ascertain if a pricing schedule disproportionately favors certain participants.

Exchanges are required to provide information on their websites that detail the pricing schedules for trading on the exchange.[189] These documents include the various tiers that market participants might qualify for, along with the associated fee or rebate.

The current transaction pricing practices of the exchanges in the market for NMS stocks is characterized by a large number of different pricing possibilities. These possibilities arise, in part, because fees and rebates for trades are often contingent on multiple factors including, the order types used in the trade, and whether the trade takes place in opening or closing auctions with additional discounts for volume-based tiers. The combination of the large number of pricing contingencies on many of the exchanges and the number of different exchanges in the market creates a large number of different pricing possibilities for market participants to consider when choosing where to route orders.[190]

The volume-based tiers[191] used in many exchange pricing schedules are generally based on a member's trading volume relative to the market's total trading volume in the month in which the market participant's trades take place. This means that the member faces a degree of uncertainty during the month about the precise tier it will be able to achieve on the exchange during the month.

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[189] See supra note 7 and accompanying text.

[190] See RBC Letter, supra note 19, at 8 ("Our analysis identifies at least 1,023 pricing paths across the exchanges.").

[191] See supra sections I.B and IV.B.1 (discussing volume-based pricing tiers).

The complexity and number of the various tiers, along with the frequency with which they change,[192] creates the possibility that for some tiers, only a few market participants qualify in a given month. It may even be the case that some tiers only have a single market participant that ultimately qualifies for them in a given month on a specific exchange.[193] If only one or a small number of members regularly qualify for a particular pricing tier it may suggest that an exchange's pricing schedule is structured to reserve the tier for the benefit of particular members. Pricing tiers of this manner could serve to entrench the dominant position of some members and contribute to the competitive imbalances between exchange members. Because of the lack of transparency with regards to ex-post tier qualification, the public is unable to assess whether there are tiers for which only one or a few market participants qualify. The Commission believes that many market participants are not aware of whether such limited qualification for tiers occurs.

C. Economic Effects

1. Effect of the Proposed Ban on Volume-Based Tiers for Non-Principal Orders

a. Benefits

i. Benefits to Lower Volume Exchange Members

We expect the proposal to yield some benefits to lower-volume exchange members, some of which would be passed on to investors who are their customers. In particular, to the extent that the differences in transaction fees would be less extreme under the proposed prohibition on volume-based pricing for agency-related volume in proposed Rule 6b-1(a), the proposed volume-

192 See supra section I.B (discussing changes to, and general complexity of, pricing schedules).

193 See Healthy Markets Letter, supra note 165, at 5.

based ban would result in benefits to lower-volume exchange members in the form of lower transaction fees and higher rebates. In response to the proposed prohibition of volume-based pricing for agency-related order flow, exchanges could set fees on agency-related orders that are between the current highest fees charged in the lowest volume tiers and the lowest fees charged in the highest volume tiers paid by the high-volume broker-dealers. Such an outcome is supported by results from the price discrimination and mechanism design literatures,[194] applied to settings where trading platforms (i.e., firms making pricing decisions) face heterogeneous customers and may offer different prices depending on observable choices or observable customer characteristics. For models where firms may potentially sort customers based on volume, when comparing firm's optimal choices under price discrimination and restricting to a uniform price, prohibiting price discrimination oftentimes results in the new, flat per unit fee falling within the current range of the lowest per unit fee and highest per unit fee.[195] The context of non-volume based pricing among exchanges is more complex, as exchanges can condition prices on other broker-dealer characteristics. However, similar findings from the price discrimination literature may prevail, and price differentials across broker-dealers may be

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194 "Price discrimination" is a term of art in economics, meaning charging different prices to different segments of consumers, sometimes for identical goods or services. Under price discrimination, consumers could be segmented based on their choices of different goods or services. The practice of price discrimination is not equivalent to unfair discrimination in the legal sense. The welfare consequence of price discrimination is ambiguous and can vary across industry settings. However, a number of empirical papers have found that when restricting to a constant price, customers previously enjoying the lower prices are worse off and those enjoying higher prices are better off, relative to a world where firms can vary prices with the customers' price-sensitivity. See, e.g., Igal Hendel, and Aviv Nevo, "Intertemporal Price Discrimination in Storable Goods Markets", 103 AM. ECON. REV. 2722 (2013); Guillermo Marshall, "Hassel Costs and Price Discrimination: An Empirical Welfare Analysis", 7 AM. ECON. J.: APPLIED ECON. 123 (2015).

195 It is worth acknowledging that while charging an "intermediate" price is a plausible outcome, it is by no means the only outcome. The Commission believes an "intermediate" price to be a likely outcome given the wide range of order volume across broker-dealers, described in supra section IV.B.4.c. See W. KIP VISCUSI, JOSEPH E. HARRINGTON, AND DAVID M. SAPPINGTON, ECONOMICS OF REGULATION AND ANTITRUST 365-70 (5th ed. 2018), for a simple setting with a numerical example. Alternatively, when trading venues are optimally setting prices in standard screening settings with private "types" across customers, optimal contracts for trading venues implies price discrimination. See PATRICK BOLTON AND MATHIAS DEWATRIPONT, CONTRACT THEORY 47-52 (2005), for a general reference.

diminished under a volume-based ban. The smallest and medium-sized members, who currently pay higher transaction fees, would likely benefit from these "intermediate" prices, or prices that are less extreme relative to a setting where exchanges target low net transaction fees to high-volume broker-dealers and high fees to lower-volume broker-dealers.[196]

The proposed prohibition on volume-based pricing may result in an increase in agency order flow to medium-sized exchange members, due to their ability to divert business from direct market access customers. Under the current tiered pricing schemes, lower-volume broker-dealers with limited or no ability to route directly to exchanges are most likely to take advantage of the high-volume members' connectivity and tiers. In particular, because direct market access (DMA) pricing tends to be "cost plus,"[197] lower transaction fees/higher rebates for the high-volume exchange members may translate into lower fees for sponsored broker-dealers. The proposed ban on volume-based tiers, which would limit transaction fee differentials between the high-volume broker-dealers and the remaining players, would also lessen the pricing advantage of high-volume members when competing for DMA customers. Hence one consequence of removing the high-volume exchange members' tiered pricing advantage is that agency flow from direct market access customers may shift from the high-volume exchange members to the medium-sized exchange members.

ii. Benefits to Investors

Proposed Rule 6b-1(a) may benefit investors by increasing competition among exchange members. The advantages afforded to high-volume broker-dealers through volume-based

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196 This benefit may be, in part, a transfer from the large-volume broker-dealers, who would end up paying more under this pricing arrangement. See infra section IV.C.1.b.i (discussing costs to high-volume broker-dealers from this effect).

197 See Daniel Aisen, Connecting to the Stock Market (Choosing a DMA Partner), supra note 180.

exchange transaction pricing may favor a more concentrated market structure in the market for brokerage services in NMS stocks. The removal of volume-based pricing tiers for agency-related order flow would reduce the pricing advantage afforded to higher volume exchange members for having more customer order flow. Having the same pricing for agency-related order flow across differently sized members would allow lower-volume members to more effectively compete against higher-volume members on the basis of passing on a higher proportion of collected rebates. In contrast, the likely changes in transaction fees and rebates, previously discussed in section IV.C.1.a.i, suggest lower cum-rebate transaction fees for small and medium sized broker-dealers under the proposed ban on volume-based tiers for agency flow, which lead to higher profit margins for such firms.[198] Competition leading to a high proportion of rebates being passed through may benefit investors even in the scenario in which the proposed rule reduces the total amount of price-savings (higher rebates/lower fees) available to be passed through to investors.

The lower transaction fees for small and medium sized broker-dealers described in section IV.C.1.a.i might lead to higher profit margins for such firms. This in turn would lead to a lower propensity to exit the market for such firms, and a greater likelihood of new entrants. With more firms in the market for brokerage services in NMS stocks, competition to provide those services could increase, benefiting investors.

Following the proposed ban on volume-based tiers, medium-sized exchange members may be better positioned to gain DMA customers, compared to lower-volume exchange members who are not well-equipped with fast connectivity and trading infrastructure. Based on staff experience, the Commission understands that roughly 30 broker-dealers across exchanges,

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198 See supra note 194 and associated text.

including the dozen or so largest exchange members, have functional smart order routers ("SORs"), dedicated cabinets at data centers, and enough technical staff to support their functionalities. Consistent with that understanding, the average exchange has 34 members who contribute up to 99% of its dollar volume, where the average is taken over the 16 exchanges for the month of January 2023.[199] This observation aligns with the fact that substantial economies of scale are required to build expensive SORs with significant operational and regulatory risks. Consequently, while there is gradation in execution quality among exchange members, the difference in capability is more pronounced between the 30 or so large or medium-sized exchange members with both functional SORs and fast connectivity and the remaining small players. Banning volume-based tiers for agency-related order flow, which is expected to level competition for direct market access would benefit investors.

The extent to which lower net transaction fees facilitate the survival of lower-volume broker-dealers a wider variety of broker-dealers may be available to investors. Some lower-volume broker-dealers may specialize in niche areas or be better positioned to provide personal attention to investors and the proposed rule could help prevent the loss of such firms, benefitting investor welfare.

The proposed prohibition on volume-based transaction pricing for agency-related trades may also result in the benefit of improved execution quality for some customers of broker-dealers by removing an incentive to concentrate agency order flow. Reducing the incentive to concentrate agency order flow may result in improved execution quality for the direct market access customers of broker-dealers particularly if the broker-dealer had previously routed

[199] This calculation was performed by first tabulating the number of members contributing up to 99% of dollar volume for each exchange, and then takes the mean across exchanges. The counts are based on data from the Consolidated Audit Trail, for the month of Jan. 2023.

customer orders in accordance with that incentive. How much the customers of exchange members would tend to benefit from reducing the conflict of interest is uncertain as it is dependent on the preferences and practices of each routing broker. Additionally, the proposed prohibition of volume-based pricing for agency-related order flow will not resolve all potential conflicts of interest between exchange members and their customers.

Currently, when exchanges offer volume-based transaction pricing to members in return for those members executing more orders on the exchange, this creates a financial interest that could incentivize a member to route orders, including customer orders, to certain exchanges to qualify for better tiered pricing on those exchanges.[200] A prohibition on volume-based transaction pricing would remove this incentive. As a consequence of the proposed rule, broker-dealers may focus on execution quality for their customers in making routing decisions without the influence of volume-based exchange transaction pricing, which may result in improved execution quality.

Lower exchange transaction fees[201]that could result from the proposed rule and that better facilitate the survival of smaller brokers may result in benefits to investors through increasing the variety of broker-dealers available. Although smaller broker-dealers may not have the scale economies of larger broker-dealers, they may have firm-specific expertise valued by particular investors. A brokerage's strength may lie in good research in a niche area or personal attention which contributes to a firm's perceived service quality. By preventing the loss of firm-specific advantages and increasing the overall variety of broker-dealers, lower exchange transaction fees

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200 See supra section IV.B.3 (discussing this conflict of interest in greater detail).

201 See supra section IV.C.1.a.i discussing how the proposed ban on volume-based tiers for agency orders may reduce transaction fees paid by smaller executing brokers.

and higher rebates for small broker-dealers may enhance investors' overall welfare under the proposed ban on volume-based exchange rebates for agency-related volume.

iii. Benefits to Lower Volume Exchanges

Based on analysis described in section IV.D.2 below, the Commission expects that the proposed rule may decrease the level of order flow concentration for agency and riskless-principal orders and increase the concentration of principal order flow, which would be likely to benefit some exchanges. In the analysis of the changes to competition among exchanges, the Commission considered four separate scenarios: (1) agency order flow concentration decreases by 100%, (2) agency order flow concentration decreases by 20%, (3) principal order flow concentration increases by 20%, and (4) agency order flow concentration decreases by 20% and principal order flow concentration increases by 20%.[202]

Lower volume exchanges would be most likely to benefit from a decrease in the concentration of agency order flow. In the upper bound case where agency order flow was maximally dispersed (agency order flow concentration decreases by 100%), 11 of the 16 exchanges that currently make up a combined 19.58% of the on-exchange market would experience a 2.38 percentage point increase in market share on average. Assuming that both volume and average net captures remain the same as those of January 2023, this would translate to a combined overall increase of $26,382,403 in net transaction fee revenue across the 11 venues.[203] In the less extreme scenario in which concentration of agency order flow decreases

202 See infra section IV.D.2.b and Table 9 (for detailed discussion of the different scenarios discussed here and the underlying assumptions made).

203 See supra note 123 and the accompanying text (for a description of how net transaction fee revenue is estimated and the assumed average net capture rates).

by 20%, the same smaller exchanges would still benefit, but with an average increase in market share of 0.47 percentage points and a combined overall increase of $5,276,481.

The Commission's competition analysis[204] also considers the possibility of an increase in the concentration of principal order flow. That analysis concludes that the highest volume exchanges would be more likely to benefit from an increase in the concentration of principal order flow. Using January 2023 market shares, the 5 largest exchanges would experience an average 0.50% percentage point increase in market share given a 20% increase in principal order flow concentration. Assuming that both volume and average net capture rates remain the same as those of January 2023, the increase in market share would translate to a combined overall increase of $2,900,853 in net transaction fee revenue across the 5 venues.

The Commission also considered a case in its competition analysis[205] where a 20% increase in principal order flow concentration is coupled with a 20% decrease in the concentration of agency order flow would result in increased market shares for the 12 smallest exchanges by trading volume, with the exception of a single exchange, which would lose market share. In this case, the eleven positively affected exchanges would experience an average percentage point increase in market share of 0.26% and a combined increase in net transaction fee revenues of $2,574,733. That exchanges could be negatively or positively affected when only one kind of order flow concentration changes, indicates that exchanges have different sensitivities to changes in order-flow concentration.

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[204] See infra section IV.D.2.b.

[205] See infra section IV.D.2.b.

b. Costs

i. Cost to High-Volume Exchange Members

To the extent that average exchange per unit trading fees become more expensive than the lowest per unit (i.e., top tier) fees currently offered, the proposed banning of volume-based exchange transaction pricing for agency-related volume would result in costs for the high-volume exchange members and possibly the smaller non-members routing through them if they receive pass-through exchange transaction pricing. This increase in costs may in turn cause the commissions charged by such broker-dealers to increase, resulting in costs for their customers as well.

The proposed ban on volume-based exchange transaction tiers might impose costs on a handful of the high-volume members in the form of lower rebates/higher transaction fees for agency order flow, along with loss of customer flow due to the large members' reduced price advantage when competing for customers. Various sources suggest that lower-volume exchange members may be effectively subsidizing a handful of the high-volume members receiving net payments.[206] A ban on volume-based exchange transaction tiers that dampens the extent of cross-subsidization across broker-dealers may cost the large members their forgone net payments. A second source of cost is the loss of potential customer flow, order flow that may have otherwise streamed to the top broker-dealers. Under volume-based pricing, the top broker-dealers' lower trading costs may give them a price advantage when competing for customers against smaller members. As the high-volume broker-dealers can better afford lower commission fees, they attract greater order flow from investing customers and non-members, which enhances their ability to attain more favorable pricing tiers. The proposed ban on volume-

206 See Healthy Markets 2018 Letter, supra note 165, at 5; Chester Spatt, "Is Equity Market Exchange Structure Anti-Competitive?", supra note 166, at 7.

based discounts removes the competitive advantage that the high-volume broker-dealers otherwise gain through this self-reinforcing cycle.

Tiered rebates that aid in the concentration of order flow among high-volume exchange members may be desirable from an allocative efficiency perspective. Due to their scale economies, the high-volume exchange members may be most efficient at executing. Alternatively, the high-volume exchange members may have technology, capital or service strengths arising from their scale economies. Directing order flow to the high-volume exchange members may better ensure that resources are utilized in a cost-effective manner. Conversely, under the proposed ban on volume-based pricing, dispersing order flow across broker-dealers may reduce allocative efficiency.

An indirect, negative effect on the high-volume broker-dealers would arise from removing direct market access services and sponsored access from the tier qualifications for the high-volume members. If exchanges did not adjust their pricing levels in response to the proposed ban on volume-based exchange transaction pricing for agency-related volume, then removing the sponsored customers' order flow from the tiers calculation would weaken their ability to obtain more favorable pricing on principal orders compared to lower-volume members, thus eroding this competitive advantage.

Exchange members with large principal order flow also tend to have large agency order flow which is consistent with greater liquidity provision of either kind encouraging liquidity provision from the other order type. The majority of exchange members with principal order flow also route agency orders to the same exchange. There are over a thousand exchange-member firm pairs from January 2023 across 16 exchanges, with a majority of exchange members engaged in principal trading. Among exchange members that handle both principal and agency trades, 79% of members with principal trading also routed agency orders. One can compare a firm's position within the distribution of principal volume against its rank among agency trading firms on the same exchange. Conditional on executing both agency and principal orders on the same exchange, 83% of members whose principal trading was above an exchange's median dollar volume also ranked in the top half of agency trading dollar volume. Again, among members routing both types of orders, approximately 61% of members that ranked in the top quarter in terms of principal dollar volume also qualified for the top quarter of agency dollar volume on the same exchange. Thus, high relative principal flow is imperfectly associated with high relative agency flow. One plausible underlying force is that top-tier exchange transaction pricing (notably, rebates) earned from large principal flow provide incentives for non-members to direct their agency-related order flow through high-volume members to take advantage of a portion of that better exchange transaction pricing that may not otherwise be available to them. For these sponsoring members that already are rewarded preferred pricing for their principal flow, orders routed through them from non-members further contributes to the firm's larger agency and overall presence.

While the direct effect of the proposed banning of volume-based exchange transaction fee tiers could raise transaction costs on the high-volume broker-dealers' agency orders, the overall effect on the high-volume broker-dealers' trading activities and total welfare[207] depends on how exchanges respond to the proposed ban, especially through adjusting volume-based tiers for principal order flow. Offering a steeper volume-based pricing discount, or lower per-unit prices for greater utilization, has been documented as a means to attract demand to platforms in other

[207] Here "total welfare" is defined as profitability summed across exchanges and broker-dealers with trading activities facilitated by exchange members.

market settings.[208] Likewise it is conceivable that while a ban on agency-related volume discounts could weaken the incentive to extract increasing levels of agency order flows if exchanges chose not to offer their best transaction pricing to all members equally, exchanges might respond with an increased rate of discounting for principal order flows. More generally, with the proposed ban on agency-related price tiers, the exchanges might re-adjust pricing schedules within each family of affiliated exchanges. Enhancing principal order flow enhances the liquidity externality across exchanges within a family, thereby increasing the value of keeping agency order flow on exchanges.

For high-volume broker-dealers trading in a principal capacity, the exchanges might re-adjust price schedules in a way that leaves the current high-volume firms with no substantial drop in profitability. While the proposed ban on agency-related volume transaction pricing tiers would weaken the competitive advantage of high-volume broker-dealers over smaller ones, the exchanges may attempt to offset the potential loss of agency order flow by either lowering the agency base fee or offering even steeper volume-based discounts for principal order flow. Deeper discounts for high principal volume may even enhance the profitability of these high-volume members with high amounts of principal trading. In addition, many high-volume broker-dealers engage in both proprietary trading and in a customer brokerage business. As discussed earlier in this section many firms with high levels of principal order flows also tend to achieve high levels of agency order flow on the same exchange. In the scenario with a ban on volume-based exchange transaction pricing for agency-related flow, better pricing for principal order flow may favor many of the same high-volume members as are favored under current volume-

[208] Meghan Busse and Marc Rysman, "Competition and Price Discrimination in Yellow Pages Advertising", 36 RAND J. ECONS. 378 (2005).

based pricing schedules. If deeper discounts on principal order flow for high-volume players helped to retain substantial principal order flow, then agency order flow may also tend to coalesce on the same exchange due to the order flow externality. Changes in volume discount transaction rates for principal order flow, combined with possible fee cuts on agency order flow, may counter the profit losses from forgoing previous subsidies on agency-related order flow for the high-volume broker-dealers.

ii. Cost To Investors With Trades Intermediated By High-Volume Exchange Members

Investors and other market participants that send exchange orders through large exchange members, which currently likely benefit from the volume-based transaction tiers of their sponsors, may experience costs in the form of higher fees from their executing broker-dealers under the proposed rule. In the absence of the ability of exchanges to use volume-based transaction pricing for agency-related flow, investors which rely on high-volume exchange members for market access may be left with relatively more expensive exchange transaction fee options. The transition from volume-based tiers to a flat fee that could result from the proposed rule is expected to lead to fees and rebates that are between the current values for the highest and lowest tiers.[209] This would lead to large-volume broker-dealers who qualify for the best tiers to be worse off, and low-volume broker-dealers to be better off. Because the changes for these broker-dealers would be to the marginal costs of their trading, the Commission expects this to impact the prices charged to their investor customers in the same direction. That is, when considered in isolation, this effect would tend to make customers of large broker-dealers worse off and customers of small broker-dealers better off. One potential response to limiting volume-

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209 See supra section IV.C.1.a.i for discussion of this point.

based pricing for agency-related order flow would be for the exchanges to set intermediate transaction pricing for agency-related orders that are between the current highest fees charged in the lowest volume tiers and the lowest fees charged in the top-tiers.[210] To the extent that average exchange pricing on agency-related orders become more expensive than the previous top-tier pricing, investors and any intermediating broker-dealers who previously benefitted from the high-volume broker-dealers' passing through the volume-based exchange transaction pricing may be worse off.

Another category of trading activity that would no longer benefit from the tiered pricing advantages of high-volume broker-dealers would be sponsored and direct market access. Because proprietary traders using such access trade through the exchange member's connectivity to the exchange, orders directly routed to a trading center through sponsored access are marked as agency orders. These orders would no longer count towards volume-based tiers of the sponsoring member. Consequently, some sponsored traders may face higher net fees, compared to a setting where (1) the sponsored traders benefit from being the customers of top-tiered broker-dealers and (2) incorporating orders from sponsored traders reinforces the broker-dealers' ability to achieve higher rebates. The proposed ban on volume-based tiers may have a particularly adverse effect on the smaller traders that use these arrangements. Without the ability to tailor agency-related transaction fees to trading volume, some exchanges may not find it worthwhile to lower average fees in order to retain the order flows of the smallest traders.

The Commission also believes that the proposed banning of volume discounts, when considered in isolation, may have the effect of reducing efficiency if high-volume exchange members reduce the amount of order flow which they execute on the exchanges, something

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210 See supra section IV.C.1 for additional discussion on effect of the tiering ban on transaction pricing.

which could harm investor welfare.[211] As high-volume exchange members likely contribute substantially more to the depth of book on an exchange, a withdrawal of agency order flow on exchanges by these members may lower the overall displayed liquidity provision imposing a negative externality on other exchange members.[212]

iii. Costs to Higher-Volume Exchanges

Based on the analysis described in section IV.D.2 below, the Commission expects that the proposed rule may decrease the level of order flow concentration for agency and riskless-principal orders and increase the concentration of principal order flow, which would result in costs for some exchanges. The Commission considers four separate scenarios: (1) agency order flow concentration decreases by 100%, (2) agency order flow concentration decreases by 20%, (3) principal order flow concentration increases by 20%, and (4) agency order flow concentration decreases by 20% and principal order flow concentration increases by 20%.[213]

Larger exchanges would be most likely to bear a cost in the form of lost market share and net transaction cost revenue from an expected increase in the dispersion of agency order flow across more competing exchanges. Per Table 9, in the extreme case where broker-dealers decrease their agency order flow concentration by 100%, 5 of the 16 exchanges that currently make up a combined 80.42% of the on-exchange market would experience a 5.24 percentage point decrease in market share on average. Assuming that both volume and average net captures remain the same as those of January 2023, this would translate to a combined overall decrease of $32,720,244 in net transaction fee revenue across the 5 venues. In the scenario under which

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211 See section IV.C.1.b.iii for a discussion of the costs to high-volume exchange members.

212 See section IV.D.1 for additional discussion of the effects of lower agency order flow on investor welfare and of the effects on efficiency that the costs to high-volume broker-dealers could have.

213 See section IV.D.2.b and Table 9 (for detailed discussion of the different scenarios discussed here and the underlying assumptions made).

agency order flow concentration decreases by 20%, these 5 exchanges would also be adversely affected, though not as much as in the case of even re-distribution of agency flow across exchanges, with an average decrease in market share of 1.05 percentage points and a combined overall decrease in trading revenues of $6,544,049.

Smaller exchanges may lose market share from a given increase in the concentration of principal order flow. Using January 2023 market shares, the 11 smallest exchanges by trading volume would experience an average 0.23% percentage point decrease in market share given a 20% increase in principal order flow concentration. Assuming that both volume and average net capture rates remain the same as those of January 2023, the decrease in market share would translate to a combined overall decrease of $3,356,751 in net transaction fee revenue across the 11 venues.

In the case where a 20% increase in principal order flow concentration is coupled with a 20% decrease in the concentration of agency order flow, it could result in decreased market shares for the four largest exchanges. In addition, one smaller exchange could also lose market share in this case. In this case the five negatively affected exchanges would experience an average percentage point drop in market share of 0.58% and a combined decrease in net transaction fee revenues of $4,298,199.

iv. Increase in Principal Trades

The Commission recognizes that the proposed prohibition of volume-based pricing for only agency and riskless-principal orders would likely increase the benefits of principal trading which may increase systemic risk across broker-dealers. Without being able to count on agency order flow to help qualify for a volume-based tier exchange members may have to increase the concentration of their principal order flow in order to qualify for a preferred pricing tier. This effect likely would be exacerbated should exchanges adopt pricing schedules with more attractive volume-based pricing tiers for principal orders.[214]

One way market participants could increase their principal order flow would be to increase proprietary trading operations. Proprietary trading can increase market instability if the positions of different traders are correlated as correlated trading can amplify price movements and quickly deplete available liquidity.[215]

Some exchange members might adopt an inventory-based model to manage to effectively substitute what would have been agency or riskless principal orders with principal orders. Under an inventory model the broker dealer would aim to uphold a target inventory level in its traded securities which they could thereby use to internalize their customer trades. After internalizing the customer trade the broker-dealer could offset any changes in their inventory by executing an identical order on an exchange. The offsetting order, since it would be to manage the broker-dealer's inventory, would be a principal order. If the off-setting principal order is executed on exchange at the same price at which the customer order was previously internalized at, then the internalize-then-offset process would effectively transform what would have otherwise been an agency or riskless-principal order into principal order. The member broker-dealer would however risk that the offsetting principal trade would be executed at a worse price than what it had internalized the customer order at.

Maintaining an inventory position is both costly and risky. Holding inventory involves the investment of capital, broker-dealers have to purchase the shares needed to have a sufficient supply of stock in order to fill marketable buy orders as well as sufficient cash to handle

214 See section IV.D.2.a.

215 See Malceniece, Laura, Kārlis Malcenieks, and Tālis J. Putniņš. "High frequency trading and comovement in financial markets." Journal of Financial Economics 134.2 (2019): 381-399.

marketable sell orders. Exchange members looking to transition to an inventory model may also have to maintain specific net capital levels as required by regulations to maintain solvency.[216] It is risky because holding non-zero inventory exposes the member broker-dealer to losses due to price fluctuation. This risk could lead to correlated trading among inventory-holding broker-dealers if price changes cause some to liquidate their inventory positions. This kind of correlated trading can exacerbate systemic risk among broker-dealers, as the liquidation of inventory by some can trigger further liquidations by others forming a self-reinforcing cycle. In the case that following this proposed rule exchanges would adopt pricing schedules that would make the transition to an inventory model worthwhile, larger broker-dealers would likely have a competitive advantage in absorbing the costs and managing risk given their greater resources. The Commission expects the costs associated with a shift in business model to limit the increase in principal trading due to broker-dealers taking on inventory for internalization.

v. Migration to Off-Exchange Venues

The proposed prohibition of volume-based pricing for agency-related order flow by exchanges would risk exchanges losing market share to off-exchange venues. In addition to competing with other exchanges, exchanges also use volume-based pricing tiers as a means of competition for order flow with off-exchange market centers such as wholesalers and ATSs. Lacking the ability to offer volume discounts on agency-related order flow may make exchanges less competitive. Not being able to realize preferential pricing offered by the highest volume-based tiers for the agency portion of their order flow higher volume exchange members may instead face less attractive pricing thereby making off-exchange venues relatively more attractive.

[216] See 17 CFR 240.15c3-1.

Freeing up agency flow from the effects of volume-based tiers could result in fewer agency orders routed to exchanges. This view is manifested by both standard screening games from the mechanism design literature and price discrimination models, which suggest that volume-based price discrimination, particularly those based on absolute pricing tiers, can increase total demand for the platforms.[217] On the other hand, shutting down quantity discount schemes would remove a way for individual exchanges to better retain order flow from migrating to competing venues. This may lead to both greater dispersion of order flow across exchanges and a decline in trade volume among exchanges. Either (1) total order flow across exchanges may decrease or (2) a portion of that flow moves off-exchange, which in turn would harm on-exchange liquidity and increase trading costs.

Applying the insights from the price discrimination literature to the exchange setting suggests that the proposed ban on volume-based pricing may decrease both overall order flow across exchanges and overall efficiency, defined in terms of profit summed across broker-dealers and the exchanges. Standard theoretic models suggest that price discrimination can be a natural consequence of the trading venues' profit-maximizing incentive schemes (i.e., contracts with customers), in setting with incomplete information present. Incomplete information could denote a setting with variation in valuation for execution/gains to trade across broker-dealers. Because the exchanges cannot perfectly ascertain each broker-dealer's intrinsic preference for trades, exchanges cannot condition transaction fees on broker-dealers' (private) valuations for order execution. Offering volume-based price discounts, compared to a regime prohibiting

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217 See Hall R. Varian, "Price Discrimination and Social Welfare," 75 AM. ECON. REV. 870-75 (1985).

217 See W. KIP VISCUSI, JOSEPH E. HARRINGTON, AND DAVID M. SAPPINGTON, ECONOMICS OF REGULATION AND ANTITRUST 365-70 (5th ed. 2018), Chapter 8 "Monopolization and Price Discrimination", pp 365- 370 for a simple setting with a numerical example. See also Hall R. Varian, "Price Discrimination and Social Welfare," 75 AM. ECON. REV. 870-75 (1985).

pricing tiers, can encourage broker-dealers with the most to gain from trade to better express their higher willingness to participating on an exchange. Tiered pricing can heighten the incentive to add liquidity to exchanges, enhancing not only total order flow and profit summed across the exchanges but also total broker-dealers' welfare. Prohibiting tiered pricing may shrink exchanges' overall profitability, to the detriment of broker-dealers as well.

Effectiveness of using price discrimination to increase total surplus, relative to a world absent of volume-based discounts, depends on sufficient heterogeneity across exchange members. Higher valuation, or greater gains from execution, could originate from the lower cost of operating broker-dealer businesses for high-volume exchange members. While the range of data products and co-location services offered by exchanges present substantial fixed costs for exchange participants, fees for proprietary data and connectivity do not increase proportionally with trading activity. As the per-share cost falls with increases in the exchange's trading volume, high-volume broker-dealers may find the value of trading greater than lower-volume exchange members. Another feature of standard screening models is that the participant's intrinsic value is revealed by the exchange member's self-selected quantity. The broad range of trading quantities across agency broker-dealers suggests a large degree of heterogeneity across agency broker-dealers. Across the 16 exchanges in January 2023, the coefficient of variation for dollar volume among exchange members' agency order flow ranges from 1.3 to over 3.3. Fixing an exchange, the exchange member at the 25th percentile has agency dollar volume that is as little as less than 0.1% and no more than 12.5% of the dollar volume coming from the 75th percentile exchange member.

One difference between the conventional nonlinear pricing / screening framework and the exchanges' price tiering setting is the use of relative volumes in the rebate formulae. Broker-dealers have an incentive to commit volume to an exchange so that their accumulated liquidity outcompetes rivals' liquidity and satisfies the threshold for higher rebates. The use of relative volumes in the rebate formulae may further reinforce the exchanges' ability to concentrate volume on their venue.

Market shrinkage and fragmentation of agency orders may have negative effects on transaction costs and undercut the internalization of the liquidity externality, potentially resulting in further loss of both principal and agency order flow. Coalescence on the larger exchanges is not only desirable for the exchanges but also increases the value of participating on each exchange, as trades are easiest to arrange on good terms in liquid markets. Having more consolidated markets under volume-based price tiers makes it easier for liquidity demand to meet liquidity supply on the same platform, lowering transaction costs. Conversely, loss of agency order flow from shutting down volume-based pricing could make the search for best price more costly for the remaining participants (both agency and principal) on an exchange, who might in turn decide to redirect orders away from dominant exchanges. Order flow externality reinforces the initial loss of surplus from shutting down volume-based price discrimination, resulting in further loss in efficiency, for dominant exchanges and their participants alike. Finally, as off-exchange market centers such as wholesalers often benchmark trades (and price improvement) to the NBBO, the withdrawal of a portion of on-exchange order flow may potentially result in wider (NBBO) spreads thereby harming execution quality in the market as a whole.[218]

Following the proposed ban, exchanges might adjust so as to ameliorate the loss of order flow and efficiency from reduced participation across exchange venues. In particular, one

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218 This is assuming that volume-based rebates to liquidity providers contribute to narrowing the NBBO, this particular increase in transaction costs may be limited to the extent to which such rebates do not influence the NBBO.

predicted response of the proposed ban is that some exchanges might try to retain agency order flows by offering steeper volume-based tiers for principal order flows. Deeper discounts that attract the largest proprietary traders and increase principal order flow on exchanges also benefit agency traders due to liquidity externality. More generally, exchanges might attempt to price discriminate along other dimensions not directly related to agency trading volume. As one source reports at least 3,762 separate pricing variables across exchanges, fees charged and rebates offered are based on an intricate array of other quality metrics, some of which are likely correlated with trading volume.[219] It is conceivable that exchanges might continue to "lock in" order flow by offering discounts for broker-dealers' percentage of time spent at the NBBO, among other measures of trading activities.

2. Effects of Proposed Requirement of Rules and Policies and Procedures to Prevent Evasion

a. Benefits

Proposed Rule 6b-1(b)(1) would require national securities exchanges offering volume-based transaction pricing in connection with the execution of proprietary orders in NMS stocks for the account of a member to impose rules to require members to engage in practices that facilitate the ability of the exchange to comply with the prohibition in proposed Rule 6b-1(a). Proposed Rule 6b-1(b)(2) would require national securities exchanges offering such volume-based pricing for NMS stocks to establish, maintain, and enforce written policies and procedures reasonably designed to detect and deter members from receiving volume-based transaction pricing in connection with the execution of agency or riskless principal orders in NMS stocks.

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219 See RBC Letter, supra note 19, at 1 ("In total, we found at least 3,762 separate pricing variables across the exchanges – that is, 3,762 factors that ultimately determine the fees charged and rebates offered by exchanges").

These requirements would increase the likelihood that the benefits of Rule 6b-1(a) would materialize. It is possible that exchange members would attempt to recover volume discounts for their agency-based order flow by trying to obtain volume discounts offered for principal-based order flow for their agency-based order flow. To the extent this happens, the benefits associated with prohibiting volume discounts for agency-based flow[220] would be less likely to materialize. Exchange rules requiring members to engage in practices that facilitate the exchange's ability to comply with proposed Rule 6b-1(a) and exchange policies and procedures reasonably designed to detect and deter members from receiving volume-based transaction pricing in connection with the execution of agency-related orders would reduce the likelihood that such attempts would happen, or would be successful if they did happen. The Commission is unable to quantify the size of this benefit because it is not feasible to determine the propensity of exchange members to attempt evasion without such measures in place.

b. Costs

The requirements of proposed Rules 6b-1(b)(1) and 6b-1(b)(2) would result in costs for those national securities exchanges for NMS stocks that choose to offer volume-based transaction pricing for a member's proprietary order flow after the implementation of the prohibition in proposed Rule 6b-1(a). Specifically, any national securities exchanges for NMS stocks that offers such volume-based transaction pricing would incur the legal and administrative costs to revise its rules to include the rules required by proposed Rule 6b-1(b)(1), and to develop and implement the policies and procedures required by proposed Rule 6b-1(b)(2), as well as the costs to maintain and enforce these rules and policies.

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220 See supra section IV.C.1.a (discussing the benefits associated with the prohibition on volume-based transaction pricing in agency-related volume for NMS stocks).

Table 8 provides the Commission's estimates of the PRA costs associated with developing the required written policies and procedures. The Commission estimates that there would be 13[221] exchanges that would incur these costs.

Table 8 - Compliance Costs Estimates

Description	Initial (One-time)	Ongoing (annual)
Review & revise price schedule + supplement anti-evasion rules	$23,945.00[222]	$8,949.00[223]
Collect, compile, and submit required disclosures to the Commission	$21,758.00[224]	$37,488.00[225]
Total (per exchange)	$45,703.00	$46,437.00
x 13 Exchanges with volume-based pricing	$594,139.00	$603,681.00

221 This estimate is based on the assumption that the 13 national securities exchanges for NMS stocks currently offering volume-based tiers would continue to offer such tiers for principal related order flow after the implementation of proposed Rule 6b-1(a). See supra section III.D.

222 The Commission derived the total estimated burdens from the following estimates: (Attorney at 30 hours * $462 per hour) + (Compliance Counsel at 10 hours * $406 per hour) + (Chief Compliance Officer at 5 hours * $542 per hour) + (General Counsel at 5 hours * $663 per hour) = $23,945 per exchange in initial costs. $23,945 per exchange x 13 respondents = $311,285 total initial costs. See supra note 84. The Commission derived the hourly rate figures from SIFMA's Management & Professional Earnings in the Securities Industry 2013, modified to account for an 1,800-hour work-year and inflation, and multiplied by 5.35 to account for bonuses, firm size, employee benefits, and overhead.

223 The Commission derived the total estimated burdens from the following estimates: (Compliance Attorney at 12 hours * $406 per hour) + (Compliance Manager at 8 hours * $344 per hour) + (Business analyst at 5 hours * $265 per hour) = $8,949 per exchange in ongoing annual costs. $8,949 per exchange x 13 respondents = $116,337. See supra note 85.

224 The Commission derived the total estimated burdens from the following estimates: (Sr. Programmer at 25 hours * $368 per hour) + (Sr. Systems Analyst at 10 hours * $316 per hour) + (Compliance Manager at 10 hours * $344 per hour) + (Director of Compliance at 5 hour * $542 per hour) + (Compliance Attorney at 8 hours * $406) = $21,758 per exchange in initial costs. $21,758 per exchange x 13 respondents = $282,854. See supra notes 85, 106, and accompanying text.

225 The Commission derived the total estimated burdens from the following estimates: (Compliance Attorney at 6 hours * $406 per hour) + (Compliance Manager at 2 hours * $344 per hour) = $3,124 per monthly filing. $3,124 x 12 months = $37,488 per respondent. $37,488 per exchange x 13 respondents = $487,344. See supra note 89.

The requirements of proposed Rules 6b-1(b)(1) and 6b-1(b)(2) to revise exchange rules and implement anti-evasion policies and procedures would also impose costs by increasing the likelihood that the effects of Rule 6b-1(a), the prohibition of volume-based pricing to agency-related order flow, are realized. The Commission believes the proposed prohibition on volume-based transaction pricing for agency-based order flow would result in costs.[226]

3. Effects of the Transparency Provisions

a. Benefits

i. Increased Transparency

Proposed Rule 6b-1(c) would require equities exchanges to make monthly submissions to the Commission concerning how many members qualify for their volume-based pricing in connection with the execution of proprietary volume in NMS stocks, among other things.[227] Knowing the number of exchange members that qualify for the different tiers will provide additional information to exchange members who would be concerned with which tiers they qualify for per their principal trading. While exchange members already know the tier qualification criteria or many volume-based tiers knowing the tier qualification criteria does not mean that an exchange member can with certainty know which tier it would qualify for a given absolute amount of trading volume. For example, many volume-based pricing tiers set the volume threshold needed for tier qualification as a percentage of aggregate measures such as the total consolidated trading volume[228] which is dependent on the trading of other market

226 See supra section IV.C.2.b (discussing costs associated with proposed Rule 6b-1(a)).

227 See supra section II.D, discussing the full requirements of proposed Rule 6b-1(c).

228 For example, one exchange defines total consolidated volume as "the total consolidated volume reported to all consolidated transaction reporting plans by all exchanges and trade reporting facilities during a month in equity securities, excluding executed orders with a size of less than one round lot." See https://listingcenter.nasdaq.com/rulebook/nasdaq/rules/nasdaq-equity-7.

participants and not just that of the member itself. The disclosures of how many members qualify for their volume-based pricing in connection with the execution of principal flow would help resolve uncertainty regarding the distribution of tier qualification.

The Commission expects that the main benefit from the disclosure provisions of the proposed rule would be to improve the comments provided by members and other interested parties by providing information on the distribution of member tier qualification. As previously mentioned,[229] the monthly disclosures would identify the different transaction pricing tiers at each exchange and provide a breakdown of how many members qualified for the various tiers each month. The enhanced transparency would increase the ability of the exchange members, other exchanges, and other interested parties to assess how many members qualify for specific transaction pricing on an exchange and better understand the effect of exchange fee tiers which may enable more detailed comment. The Commission expects that by helping interested parties in providing more detailed comment on future fee filings the required disclosures would enhance the information available to the Commission and improve regulatory efficiency.

Disclosure of the number broker-dealers qualifying for each tier across all NMS stock exchanges would enable investors to learn the distribution of transaction fee-related costs across broker-dealers.

The proposed rule would also require the exchanges to disclose the number of members that executed principal orders in NMS stocks for each month as well as provide a table enumerating each volume-based tier along with basic information regarding the tier and its qualification criteria. While the Commission does not expect these other items to provide new benefits, since total membership numbers and detailed pricing schedules are already publicly

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[229] See supra section II.D.

accessible, the proposed rule would also require that these data be submitted to EDGAR in Inline XBRL, which would be a benefit as we discuss below.

ii. Benefits of EDGAR and Inline XBRL Requirements

Under proposed Rule 6b-1(c)(3), exchanges would provide the monthly disclosures in EDGAR in Inline XBRL. Requiring equities exchanges to present this information in a machine-readable, structured data language—namely, Inline XBRL—rather than an unstructured format (e.g., HTML, ASCII, PDF) would further heighten transparency around exchange fee tier structures by facilitating more efficient retrieval, comparison, aggregation, and other analysis of fee tiers data on specific exchanges as well as across different exchanges and time periods. The use of Inline XBRL tags for proprietary volume-based pricing disclosures would thus make the disclosures more easily accessible to, and usable by, the Commission, exchange members, and the public, which in turn should allow for more efficient review of the impact of volume-based exchange transaction pricing.

Inline XBRL is an open, nonproprietary standard overseen by a not for profit consortium that includes a community of service providers and software tools.[230] Exchange members and market participants could leverage this existing infrastructure to readily compile, compare, and analyze the number of tiers at different exchanges, the number of members in various tiers at different exchanges, and the financial benefits attributable to different tiers within and across exchanges. Thus, the Inline XBRL standard could help the public more efficiently assess the effects and application of exchanges' volume-based pricing for NMS stocks for proprietary volume.

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230 See About, XBRL.org, available at https://www.xbrl.org/the-consortium/about; Tools and Services, available at https://www.xbrl.org/the-standard/how/tools-and-services/.

In addition, requiring exchanges to file the disclosures with the Commission would allow the Commission, the public, or exchange members to access the disclosures directly from a central, publicly accessible location, thus enabling efficient access and retention of the number of exchange members that qualify for each volume-based pricing tier on their proprietary volume. Centralized filing of the proposed disclosures would assist members, other exchanges, and the public in analyzing and commenting on volume-based exchange transaction pricing schedules that apply to proprietary volume. Additionally, centralized filing of the tiers disclosures with the Commission could, by making it easier for the Commission and the public to retrieve the exchange fee tiers disclosures over time from a single source, facilitate assessment of the level of competition and the impact of pricing tiers on intermarket competition.[231] The EDGAR system also would enable technical validations (i.e., programmatic data error checks) on the disclosures, thus potentially improving data quality by reducing the incidence of non-discretionary errors (e.g., including text for a disclosure that should contain only numbers).

iii. Impact on Exchange Price Schedules

The proposed transparency provisions would publicly reveal the number of exchange members which qualify for different pricing tiers on each exchange. If publicized, this information could prompt exchanges to reconsider their pricing structures, especially if they could give the appearance of disproportionately favoring a small number of exchange members. A possible effect of this kind of disclosure could be for exchanges to voluntarily adopt price schedules with fewer pricing tiers that end up applying to a few select exchange members in order to not give the appearance of disproportionately favoring a small number of exchange

[231] See supra section II.D (establishing the more effective assessment of whether pricing tier changes are reasonable, equitably allocated, not unfairly discriminatory, and do not impose a burden on competition as an objective of proposed Rule 6b-1(c)).

members. If exchanges adopt pricing schedules which result in a more even distribution of tier qualification as opposed to pricing schedules where more members qualify for lower volume tiers and few qualify the top tiers it could result in a benefit to the small to medium-sized exchange members who, under the current price schedules, may struggle to qualify for the best pricing tiers.

Such a shift in pricing structure would enable a broader range of members to qualify for improved pricing terms which in turn could help level the competitive field in the market between exchange members to provide direct market access to non-member customers insofar as members subsidize the terms offered to their agency customers with the savings realized from hitting higher pricing tiers with their principal order flow.

b. Costs

i. Implementation Costs

With respect to the Inline XBRL requirement for the proposed fee tiers disclosures, equities exchanges would incur both initial Inline XBRL compliance costs, such as the cost of training in-house staff to prepare filings in Inline XBRL, and the cost to license Inline XBRL preparation software from vendors, and ongoing Inline XBRL compliance burdens that would result from the proposed tagging requirements. The proposed Inline XBRL requirements for the proposed fee tiers disclosures would result in compliance costs for equities exchanges relative to the current baseline, because equities exchanges would be newly required to apply Inline XBRL tags to the proposed disclosures before filing the fee tiers disclosures with the Commission (or pay a third-party tagging service provider to do so).

Because Inline XBRL tagging compliance software has already been developed and is already in use by public reporting companies to fulfill Inline XBRL requirements, the Commission expects that vendors would update their tagging software to accommodate the proposed Inline XBRL requirement for the proposed fee tiers disclosures if such a requirement is adopted. Equities exchanges currently are not subject to Inline XBRL requirements to comply with their legal requirements as exchanges. That said, most equities exchanges are affiliated with public reporting companies that are subject to existing Inline XBRL requirements. For example, 12 of the 16 equities exchanges are affiliated with public companies that are required to file financial statements and other disclosures in EDGAR in Inline XBRL.[232] To the extent that an equities exchange shares compliance systems with an affiliated entity that is required to submit Inline XBRL structured filings in EDGAR, or could otherwise leverage the affiliated entity's processes, licenses, service agreements, and expertise in complying with Inline XBRL requirements, the exchange's compliance costs could be partially mitigated.

The Commission believes the compliance costs associated with the proposed requirement to structure the proposed fee tiers disclosures in Inline XBRL likely would decrease over time because equities exchanges likely would comply with structuring requirements more efficiently after gaining experience over repeated filings, although such an effect could be diminished for equities exchanges affiliated with public reporting companies that already have experience structuring filings in Inline XBRL.

Because national securities exchanges are not currently subject to EDGAR filing requirements,[233] equities exchanges would incur a one-time compliance burden of submitting

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232 See, e.g., Cboe Global Holdings, Inc. 2022 Form 10-K, available at https://www.sec.gov/ix?doc=/Archives/edgar/data/0001374310/000155837023008202/cboe-20230331x10q.htm; Intercontinental Exchange, Inc. 2022 Form 10-K, available at https://www.sec.gov/ix?doc=/Archives/edgar/data/1571949/000157194923000006/ice-20221231.htm; NASDAQ, Inc. 2022 Form 10-K; available at https://www.sec.gov/ix?doc=/Archives/edgar/data/0001120193/000112019323000014/ndaq-20221231.htm.

233 The Commission recently proposed that national securities exchanges and exempt exchanges, including the equities exchanges that would be covered by proposed Rule 6b-1(c), file certain forms in EDGAR in structured data languages. See Electronic Submission of Certain Materials Under the Securities Exchange

Form ID to access EDGAR as a result of the proposed requirement to submit the fee tiers disclosure via EDGAR.[234] While there are no fees associated with registering as an EDGAR filer, the Commission recognizes that the proposed requirement to submit the proposed fee tiers disclosures in EDGAR would impose compliance costs on equities exchanges in order to make limited changes to their systems, policies, and procedures to comply with the EDGAR filing requirement. These costs could be mitigated by the fact that many equities exchanges have affiliated entities that provide disclosures in EDGAR in Inline XBRL, and therefore employees of the equities exchanges could leverage the knowledge and experience about EDGAR and Inline XBRL possessed by staff within those affiliates.

ii. Reputation Costs & Changes in Exchange Price Schedules

The proposed transparency provisions which require the monthly public disclosure of the number of exchange members which qualify for different pricing tiers with their principal order flow has the potential to impose reputational costs on the exchanges. As the proposed rule would prohibit the application of volume-based tiers to agency-related order flow any qualification to a volume-based tier would have to be a function of non-agency related volume and the pricing of those tiers would only apply to non-agency related orders. The fact that the disclosure would only apply to principal trades limits the extent to which the information would be useful for market participants other than proprietary traders.

Act of 1934; Amendments Regarding the FOCUS Report, Securities Act Release No. 11176; Exchange Act Release No. 97182; Investment Company Release No. 34864 (Mar. 22, 2023) 88 FR 23920 (Apr. 18, 2023).

234 Form ID must be completed and filed with the Commission by all individuals, companies, and other organizations who seek access to file electronically in EDGAR. See 17 CFR 232.10(b); 17 CFR 249.446. Accordingly, a filer that does not already have access to EDGAR must submit a Form ID along with the notarized signature of an authorized individual to obtain an EDGAR central index key and access codes to file on EDGAR.

While exchanges currently are required to disclose their pricing schedules by publishing them online,[235] the number of members which qualify for each tier is not known to the public.[236] Some exchanges could suffer reputational costs if the distribution of members over the tiers for which they qualified for is perceived to be unfair. For instance, if only a few exchange members qualify for the most advantageous pricing tiers, the potential perception that these select few members receive advantages not available to a wider group could harm the reputation of the relevant exchange, especially if it appears as if the exchange is subsidizing the top pricing tiers at the expense of lower tiers.

The Commission believes that the risk of such reputational costs may induce exchanges to change their price schedules. Such changes would result in costs for those exchanges who undertake them, in the form of costs to alter existing price schedules, and through the possibility that such changes in price may reduce the incentive for their members to concentrate their principal order flow. Having to adopt a pricing schedule with a more even distribution of tier qualification, one where more members qualify for the different tiers, may only be possible by offering less attractive pricing across the top tiers. Trading off the pricing terms of high volume tiers in order to adopt a pricing schedule which may be perceived as more equitable could cause the exchange to lose trading volume or liquidity provided as high volume members may find other venues as more attractive following the change. As discussed in sections IV.D.2 and IV.D.1 the Commission cannot establish a reliable estimated range for the extent of these costs and which exchanges would be affected given that exchanges may modify their pricing schedules in response to many factors, including the proposed rule.

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235 See supra note 7 and accompanying text.

236 See supra section IV.B.5 (discussing the current state of price tier transparency).

D. Effect on Efficiency, Competition, and Capital Formation

1. Efficiency

The Commission anticipates that the proposed rule would result in most exchanges that trade NMS stocks significantly adjusting their transaction pricing schedules. By prohibiting one form of transaction pricing (volume-based) for trades of agency and riskless principal, the proposed rule would allow exchanges to apply different fees or rebates to principal trades. An example of one such case could entail offering fixed transaction fees and rebates to agency and riskless-principal trades but offering volume-based tiered prices to principal trades. While current pricing tiers may effectively differentiate between agency-related and principal trades it is often as a by-product of the tier categorization rather than an explicit condition of the application of the tier. An example of such an instance would be pricing tiers reserved for exchange members that are registered with the exchange as a market-maker and whose market-making orders would all be principal trades. However, this pricing would not apply to other exchange members that exclusively trade in a principal capacity if they are not registered market makers; so while all orders in such a tier may be of the same capacity categorization, qualification to such a market-maker tier does not universally apply to all principal capacity trades. The proposed rule would not prohibit exchanges from proposing transaction pricing where qualification is predicated on the capacity of the order as long as they are not based on volume to any extent.

The potential for exchanges to offer distinct pricing to principal and agency-related order flow introduces the possibility for greater market segmentation. This could arise if exchanges chose to tailor their transaction pricing schedule to favor one type of order flow over another.[237] Such segmentation could negatively impact overall transaction costs by resulting in wider spreads being quoted on the exchanges. By their very nature agency orders have to be handled by an intermediary before being able to reach one of the exchanges, which leaves agency traders with a latency disadvantage relative to principal traders that can access the exchanges directly.[238] If such a concentration of agency orders on certain exchanges occurs it would result in traders having a higher degree of certainty as to whether they are trading against an agency order or not based on which exchange the transaction is occurring. Understanding that their orders are more likely to be routed to some exchanges over others and hence more readily identified as an agency order, agency traders could elect to provide liquidity at a wider spread as a means of compensation for the increased risk of being adversely selected by a principal trader. While the latency disadvantage exists in current markets, exchanges that have a mix of agency and principal orders may see less likely adverse selection for agency orders because principal orders face more uncertainty about the capacity of their counterparty. The relative scarcity of agency order flow on exchanges that become dominated by principal trading following the implementation of the proposed rules could also result in wider spreads on those exchanges. These dynamics could be even more pronounced in the presence of additional discrepancies between the informativeness or adverse selection risk of agency and principal orders. This

237 A broker-dealer solely looking to minimize transaction fees and maximize transaction rebates would concentrate their principal order flow on the exchange(s) with the most attractive principal volume tiers and concentrate their agency flow on the exchange(s) with the best agency order pricing. Markets are more likely to fragment if the set of exchanges with the best agency order pricing differ from the set with the best principal order pricing.

238 With the exception of sponsored access trades under which the exchange member's sponsored customer can directly access the exchanges using the member’s infrastructure, although sponsored access trades comprise a small portion of total agency flow.

phenomenon further underscores the potential implications of distinct pricing mechanisms for different types of order flow on market efficiency and transaction costs.

The effects of the proposed elimination of volume-based transaction pricing tiers for agency-related trades could improve transaction quality and market efficiency by alleviating an impediment to switching the routing of orders from one exchange to another. As previously discussed, volume-based transaction price tiering effectively makes it more difficult for market participants to justify partially switching trading venues by increasing the opportunity costs of doing so, because switching the venue to which agency orders are routed to makes it less likely that the market participant will end up qualifying for a preferential pricing tier. The elimination of volume-based transaction price tiering for agency-related trades would alleviate this worry of missing out on preferential pricing and allow broker-dealers to route orders more readily to a variety of exchanges on the basis of execution quality. While variation in rebates and fees across exchanges would likely continue to exist and be one factor that influenced the routing decisions of brokers, the lack of volume-based transaction tiering would mean that brokers could route agency orders to a different exchange without jeopardizing the average net per-share costs of their overall trading.

While welfare for different customer segments may increase or decrease under the proposed ban, the overall welfare effects of banning price discrimination are ambiguous and can vary across market settings.[239] Nevertheless, standard intuition derived from economic theory suggests that when heterogeneity across customers exists, price discrimination may increase total

239 Igal Hendel and Aviv Nevo, "Intertemporal Price Discrimination in Storable Goods Markets," 103 AM. ECON. REV. 2722 (2013); Guillermo Marshall, "Hassel Costs and Price Discrimination: An Empirical Welfare Analysis," 7 AM. ECON. J.: APPLIED ECON. 123 (2015); Sofia Berto Villas-Boas, "An empirical investigation of the welfare effects of banning wholesale price discrimination." 40 RAND J. ECON. 20 (2009).

welfare (i.e., welfare summed across firm(s) and their customers who derive utility from the purchased goods) if the quantity sold increases under discrimination.[240] The analog of "customers" in the exchange setting is a combination of broker-dealers and their customers. Broker-dealers and the end investors share in gains from executing trades. As the intermediaries, to the extent the broker-dealers share the rebates with their investors, the end investors benefit from both the fulfilled trades and rebate pass-through. To the extent that broker-dealers' responsiveness to volume-based discounts is driven by the end investors' responsiveness to cost savings, volume-based discounts may expand overall liquidity across exchanges. Not only might volume-based discounts help the dominant exchange extract more order flow and revenue, but the pricing schemes could also increase broker-dealers' and their customers' total surplus.

Evaluation of price discrimination from other market settings provides the insight that volume-based pricing that attracts more agency business from high-volume exchange members may benefit both the high-volume exchange members and the exchanges, possibly at the cost of lower-volume exchange members. However, in the context of trading platforms with liquidity externality, additional order flow from high-volume exchange members may ultimately be beneficial to lower-volume broker-dealers. High-volume exchange members likely contribute substantially more to the depth of book on an exchange. When volume-based discounts induce additional order flow from high-volume broker-dealers to convene on a dominant exchange, more liquidity reduces the cost of searching for the best execution and benefits the lower-volume broker-dealers. This order flow externality, which is absent in many traditional price discrimination settings, provides a benefit that partially countervails the potential negative impact of volume-based tiers on the lower-volume broker-dealers.

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[240] See Hall R. Varian, "Price Discrimination and Social Welfare," 75 AM. ECON. REV. 870-75 (1985).

2. Competition

a. Broker-dealer competition

To the extent that such increased costs for investors caused them to send order flow to other, lower-volume exchange members, allocative efficiency in the market for NMS stock brokerage services might be reduced. The high-volume exchange members might be most efficient at executing trades due technology, capital or service strength arising from their scale economies. Directing more order flow to the lower-volume exchange members might result in resources being inefficiently utilized. The effects of the proposed rule on the competition among broker-dealers are discussed in sections IV.C.1.a.i and IV.C.2.b.i.

b. Changes in Order Flow Concentration

The Commission expects that the proposed prohibition for volume-based exchange transaction pricing on agency-related order flow would be likely to increase the dispersion of agency flow and increase the concentration of principal order flow across exchanges.

The reason that agency-related volume might be impacted in this way is that volume-based transaction pricing incentivizes the concentration of order flow and, all else being equal, the removal of this incentive should result in less concentration of that flow. Under the assumption that some variant of volume-based transaction pricing remains in place for principal orders, the concentration of principal order flow on exchanges that previously used tiered transaction pricing would be expected to increase since the absence of agency volume counting towards tier qualification could lead to a higher degree of concentration of principal flow that would be needed to qualify for pricing similar to what they realized prior to the proposed rule. As reported in Table 5 the members of exchanges with more price tiering are more likely to concentrate their order flow onto those exchanges as illustrated by higher average share of member trading volume and a greater proportion of members executing a plurality of their order flow on the exchange. This suggests that exchanges might adjust their pricing schedules to confer greater rewards to the execution of principal trading volume as a means of competing for principal trading flows. This effect would not be present if exchanges instead offered their best transaction pricing to all members equally.

The extent to which the different order flows become more or less dispersed under the proposed prohibition is uncertain as it depends on the changes of a multitude of other factors and their interactions which are infeasible for the Commission to reliably forecast. For instance, many exchange transaction pricing schedules would be likely to significantly change as a result of the proposed rule, which would likely affect broker-dealer routing decisions and could possibly increase principal trading.[241] In light of these difficulties, rather than providing a single point estimate, the following analysis will present expected effects on the exchanges that a variety of hypothetical changes in order flow concentration are likely to have.

Table 9 reports the expected trading volumes and market shares for the 16 exchanges under different changes in order flow concentration. The analysis uses the January 2023 on-exchange trading volume as a baseline. Implicit in the analysis is the assumption that the various exchange members execute the same trading volume on-exchange as they did in January 2023 baseline.[242]

Table 9 - Exchange Positions Given Changes in Order-Flow Concentration

The following table reports the total amount of executed orders (panel A) and the changes in executed orders (panel B), measured in number of shares, that were executed during regular trading hours across the 16 national stock exchanges under different scenarios using the total buy and sell executed order flow from all exchange members using a sample of CAT data for the month of Jan. 2023 from Table 4 as a baseline. Exchange members are identified as the set of unique CRD IDs in CAT which have directly routed orders to any of the national equities exchanges in the month. Exchange member CRDs are also verified in the

241 See supra section IV.C.2.b.iii (discussing how the proposed rule is expected to increase the incentive to increase the concentration of principal order flow).

242 See supra section IV.C.1.b.v (discussing how the proposed rule may increase the amount of trading which may migrate to off-exchange market centers).

CAT Industry Member Identifier List daily reference data. For each exchange the number of shares executed under the CAT allowable trade capacities of Agency, Principal, and Riskless Principal are reported. Trade capacity in CAT is defined by the exchange member for its side of a trade and represents the capacity in which the exchange member acted at trade time. Trades with the sale–condition codes–M - Market Center Official Close, –Q - Market Center Official Open, –V - Contingent Trade,–7 - Qualified Contingent Trade (QCT), –8 - Placeholder for 611 Exempt, and –9 - Corrected Consolidated Close (per listing market) were excluded. "Agency -100% Concentration" corresponds to the scenario under which every exchange member sends an equal proportion of its agency-related order flow (orders of capacity code of agency or riskless principal) across all the exchanges they are a member of. "Agency -20% Concentration" corresponds to the case where the proportion of agency-related order flow executed by each exchange member is adjusted to be 20% closer to the equal proportion levels. "Principal +20% Concentration" corresponds to the case where the proportion principal order flow executed by each exchange member is adjusted to be 20% further from the equal proportion levels. "Agency -20% Concentration & Principal +20% Concentration" corresponds to the case where the proportion of principal order flow executed by each exchange member is adjusted to be 20% further from the equal proportion levels and the proportion of agency-related order flow executed by each exchange member is adjusted to be 20% closer to the equal proportion levels. See note 243 and the associated text for a detailed description of the calculations.

Panel A: Trading Volume and Market Share Levels. Below the total order flow, measured in number of shares, for each of the four scenarios and the baseline for each exchange is reported. The percentage share of total trading volume between each of the four scenarios and the baseline for each exchange are reported under the trading volume.

Exchange	Baseline	Agency -100% Concentration	Agency -20% Concentration	Principal +20% Concentration	Agency -20% & Principal +20%
NYSE American	1,545,083,370	9,014,311,364	3,038,928,968	925,779,162	2,419,624,761
	0.64%	3.74%	1.26%	0.38%	1.00%
NYSE Arca	39,311,251,528	28,194,801,883	37,087,961,599	40,979,313,252	38,756,023,323
	16.30%	11.69%	15.38%	16.99%	16.07%
BX	1,712,065,584	10,202,384,309	3,410,129,329	954,950,476	2,653,014,221
	0.71%	4.23%	1.41%	0.40%	1.10%
Cboe BYX	4,664,774,940	10,767,820,881	5,885,384,128	3,996,852,852	5,217,462,040
	1.93%	4.47%	2.44%	1.66%	2.16%
Cboe BZX	19,855,374,396	18,464,904,008	19,577,280,318	20,177,425,112	19,899,331,035
	8.23%	7.66%	8.12%	8.37%	8.25%
NYSE Chicago	432,565,797	6,732,028,311	1,692,458,299	271,874,586	1,531,767,089
	0.18%	2.79%	0.70%	0.11%	0.64%
Cboe EDGA	5,800,545,730	10,492,471,510	6,738,930,886	5,050,458,361	5,988,843,517
	2.41%	4.35%	2.79%	2.09%	2.48%
Cboe EDGX	26,669,251,824	21,126,143,742	25,560,630,207	27,337,564,263	26,228,942,646
	11.06%	8.76%	10.60%	11.34%	10.88%
IEX	10,772,940,184	12,475,034,616	11,113,359,070	10,073,270,498	10,413,689,385
	4.47%	5.17%	4.61%	4.18%	4.32%
LTSE	12,160,554	6,380,358,525	1,285,800,148	10,749,491	1,284,389,085
	0.01%	2.65%	0.53%	0.00%	0.53%
MEMX	13,241,685,902	14,925,744,644	13,578,497,650	12,975,451,264	13,312,263,013

	5.49%	6.19%	5.63%	5.38%	5.52%
Nasdaq	68,721,861,666	36,597,959,759	62,297,081,284	71,138,284,292	64,713,503,911
	28.50%	15.18%	25.83%	29.50%	26.84%
NYSE National	2,317,954,540	9,158,405,160	3,686,044,664	1,708,621,212	3,076,711,336
	0.96%	3.80%	1.53%	0.71%	1.28%
NYSE	39,387,052,205	26,406,685,490	36,790,978,862	40,310,486,972	37,714,413,629
	16.33%	10.95%	15.26%	16.72%	15.64%
MAX Pearl	4,485,360,802	9,986,884,064	5,585,665,454	3,863,443,029	4,963,747,682
	1.86%	4.14%	2.32%	1.60%	2.06%
Phlx (PSX)	2,220,543,164	10,224,533,912	3,821,341,313	1,375,947,356	2,976,745,506
	0.92%	4.24%	1.58%	0.57%	1.23%

Panel B: Changes in Trading Volume and Market Share. Below the difference in total order flow, measured in number of shares, across each of the four scenarios and the baseline for each exchange is reported. Differences in the percentage share of total trading volume across each of the four scenarios and the baseline for each exchange are reported under the trading volume. The number of tiers for each exchange from Table 5 are also reported for each exchange.

Exchange	# of Tiers	Agency -100% Concentration	Agency -20% Concentration	Principal +20% Concentration	Agency -20% & Principal +20%
NYSE American	10	7,469,227,994	1,493,845,598	-619,304,208	874,541,391
		3.10%	0.62%	-0.26%	0.36%
NYSE Arca	72	-11,116,449,645	-2,223,289,929	1,668,061,724	-555,228,205
		-4.61%	-0.92%	0.69%	-0.23%
BX	20	8,490,318,725	1,698,063,745	-757,115,108	940,948,637
		3.52%	0.70%	-0.31%	0.39%
Cboe BYX	11	6,103,045,941	1,220,609,188	-667,922,088	552,687,100
		2.54%	0.51%	-0.27%	0.23%
Cboe BZX	26	-1,390,470,388	-278,094,078	322,050,716	43,956,639
		-0.57%	-0.11%	0.14%	0.02%
NYSE Chicago	0	6,299,462,514	1,259,892,502	-160,691,211	1,099,201,292
		2.61%	0.52%	-0.07%	0.46%
Cboe EDGA	8	4,691,925,780	938,385,156	-750,087,369	188,297,787
		1.94%	0.38%	-0.32%	0.07%
Cboe EDGX	19	-5,543,108,082	-1,108,621,617	668,312,439	-440,309,178
		-2.30%	-0.46%	0.28%	-0.18%
IEX	0	1,702,094,432	340,418,886	-699,669,686	-359,250,799
		0.70%	0.14%	-0.29%	-0.15%
LTSE	0	6,368,197,971	1,273,639,594	-1,411,063	1,272,228,531
		2.64%	0.52%	-0.01%	0.52%
MEMX	13	1,684,058,742	336,811,748	-266,234,638	70,577,111
		0.70%	0.14%	-0.11%	0.03%
Nasdaq	74	-32,123,901,907	-6,424,780,382	2,416,422,626	-4,008,357,755
		-13.32%	-2.67%	1.00%	-1.66%
NYSE National	11	6,840,450,620	1,368,090,124	-609,333,328	758,756,796

		2.84%	0.57%	-0.25%	0.32%
NYSE	93	-12,980,366,715	-2,596,073,343	923,434,767	-1,672,638,576
		-5.38%	-1.07%	0.39%	-0.69%
MIAX Pearl	8	5,501,523,262	1,100,304,652	-621,917,773	478,386,880
		2.28%	0.46%	-0.26%	0.20%
Phlx (PSX)	4	8,003,990,748	1,600,798,149	-844,595,808	756,202,342
		3.32%	0.66%	-0.35%	0.31%

Changes in concentration are calculated by either increasing or decreasing the distance between the proportions of order flow individual broker-dealers allocate to the different exchanges and an even split. For a given percentage increase in concentration, the distance between the relative share of a broker-dealer's order flow sent to an exchange and 1/N, where N denotes the number of exchanges it is a member of, is increased by that percentage amount.[243] The effect of this is to increase a member's HHI measure by reducing the share of order flow sent to exchanges for which the exchange member allocated a smaller proportion of its original order flow and increase the share sent to those exchanges for which it was already allocating larger shares of its order flow. Similarly, a percentage decrease in concentration would manifest in a lower HHI value.[244] A 100% decrease in concentration corresponding to the case when an exchange member evenly splits its order flow and the member HHI is equal to the minimum achievable value.[245]

243 Suppose that a broker-dealer allocates, for each exchange *i,* a share s_i such that the sum of s_i's across exchanges indexed by *i* ("sum of shares") equals one. Given a percentage change *p* in concentration, the broker-dealer shares are transformed to an updated $s_i^*=\max[s_i+p(s_i-1/N),0]$, where *N* denotes the count of exchanges over which the broker-dealer allocates order flow. When p>*0*, member HHI increases, since the sum of the updated $(s_i^*)^2$'s is greater than the sum of the $(s_i)^2$'s. In cases where $s_i+p(s_i-1/N) < 0$, the updated sum of shares would be greater than 1. In these cases the new shares are recalculated as the ratio of s_i^* to the updated sum of shares, in order to ensure that the shares sum to one; whenever this occurs the number of exchanges receiving non-zero order flow decreases.

244 To illustrate, if a broker-dealer distributed their order flow 70%/30% across two exchanges a 50% increase in concentration would result in a 80%/20% split (0.8 = 0.7 + *p*(0.7-0.5), and 0.2 = 0.3+*p*(0.3-0.5) for *p = 50%*). A 50% decrease in concentration would result in a 60%/40% split (0.6 = 0.7 – *p*(0.7-0.5), and 0.4 = 0.3 -*p*(0.3-0.5) fir *p = 50%*).

245 This is the case when *p*=-1, and $s_i=(1/N)$ for each exchange *i*.

The first non-baseline column of Table 9 shows what the on-exchange market would look like if all exchange members evenly split their agency flow across the exchanges they are member of while not changing the distribution of principal order flow. This case serves as an upper limit of the potential effect of the proposed rule's effect on agency-related order flow concentration. The reason why this case reflects an upper bound is because while the Commission expects agency order flow concentration to decrease as a result of the proposed rule, it believes that it is highly unlikely that the resulting market landscape would result in individual broker-dealers evenly distributing their agency-related order flow.[246] The case of an even distribution of agency-related order flow across exchanges would result in a more fragmented market with the overall pro-rata HHI falling from 0.16 to 0.08.[247]

Aside from the upper bound case of an even distribution of agency flow, a case where there would be a 20% reduction in agency flow concentration, a case where there would be a 20% increase in principal flow concentration, and a case with the combination of the two are also reported Table 9. While the case of a 100% reduction in agency-related flow concentration serves as an upper bound of the potential effects on order flow, other scenarios serve as an exercise in comparative statistics to illustrate the effects of more modest changes in concentration. For the cases of a 20% decrease in concentration of agency-related order flow and a 20% increase in principal order flow concentration, the overall pro-rata HHI would be 0.14 and 0.17, respectively. For the combined case of both a 20% decrease in agency-related flow concentration and 20% increase in principal flow concentration the resulting pro-rata HHI would be 0.15. Compared to the January 2023 HHI of 0.16, these changes suggest that the distribution

246 See section IV.B.2 (discussing non-tier factors that may influence order routing decisions).

247 Overall pro-rata HHI is calculated as the sum of squared market shares reported in Table 6.

of trading volume across the market is slightly more sensitive to decreases in agency-related order flow concentration than to similar increases in principal order flow concentration. As a result, a reasonable expectation for the likely effect of the proposed rule would be to result in a marginally more even distribution of market share across stock exchanges, which may be representative of a more competitive market.[248]

c. Tying Closing Auction Fees to Consolidated Volume

As discussed in section IV.B.1.c, tying closing auction fees to broker-dealers' overall volume helps the primary listing exchanges extend their market power and softens inter-exchange competition. For listing companies and index funds with strong interests in closing auctions, the current pricing structure heightens their incentive to divert order flow to the primary exchanges in order to qualify for lower fees during the closing auctions. The proposal would prohibit exchanges from offering volume-based pricing in connection with the execution of agency-related order flow in NMS stocks. The proposal would thus prohibit exchanges from offering transaction pricing on any orders if that pricing is determined, in part, by the execution of agency-related trading volume**.** Accordingly, the proposal would prohibit exchanges from tying transaction pricing on orders executed during closing or opening auctions to a member's agency-related trading volume in NMS stocks during regular trading hours. Limiting the listing exchanges' ability to tie prices for the closing auctions to intraday agency-related trading volume may benefit smaller exchanges without listing capabilities.

A more level playing field for intraday trading across exchanges will likely benefit broker-dealers for two reasons. First, the absence of tying that protects the primary listing

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[248] It is important to note that the basis for the statement relies on the assumption that agency-related order flow concentration would decrease at least as much as principal order flow concentration increases. More importantly the analysis assumes that exchange membership and exchange pricing schedules do not change (outside of the prohibition of applying volume-based pricing on agency or riskless principal order flow).

exchanges may result in more intense competition for order flow across exchanges during the regular hours. This may in turn result in lower transaction fees/more generous terms for broker-dealers for order executed. Second, the primary exchanges' closing auction pricing structure tends to partially foreclose broker-dealers' order flow that may have otherwise gone to whichever exchange offering the best execution quality or more generous rebates. Broker-dealers' welfare may be higher under "unbundling", if changes in choice sets result in broker-dealers choosing superior products.

3. Capital Formation

The Commission believes the proposed rules would have a modest impact on capital formation. The proposed rules may lower transaction costs for investors through their effect on exchange transaction pricing schedules,[249] broker-dealer competition,[250] and the broker-dealer conflict of interest.[251] However, the net effect is difficult to determine. For example, some broker-dealers' transaction costs may increase,[252] which could then increase the transaction costs of investors to the extent these increases are passed through to them.

To the extent the proposed rules reduce transaction costs, they would increase the efficiency of trading, which may lead to better capital allocation.

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249 See supra section IV.C.1.a.ii.

250 See supra section IV.C.2.a.i.

251 See supra section IV.C.2.a.iii.

252 See supra section IV.C.2.b.ii.

E. Reasonable Alternatives

1. Ban Volume-Based Pricing for All Orders

As an alternative to the proposed prohibition of volume-based transaction pricing for agency-related orders in NMS stocks, the Commission might instead prohibit exchanges from offering volume-based transaction pricing for all volume in NMS stocks.

The Commission believes that much of the baseline regarding the effects of volume-based transaction pricing on agency-related volume is relevant to principal-based volume. One difference in the baseline for principal order flow from proprietary trading is that such order flow does not have the potential for a conflict of interest between members and customers with respect to routing. Because the member trades for its own account when routing in a principal capacity, only its own interests are at stake in the routing decisions. Currently, the transaction fees that a member pays and the rebates that it receives apply to both the member's agency-related volume and its proprietary volume, as exchanges generally do not distinguish their pricing tiers for orders solely on the basis of whether the order was filled in a principal or agency capacity. However, some tiers, such as those reserved for registered market makers, effectively only apply to principal orders. In addition, the incentives, in the form of lower transaction pricing, that volume-based exchange transaction pricing create to attract members to route their orders to particular exchanges also apply to principal orders in the same way that they do for agency-related orders.[253] Further, the potential for burdens on competition between members associated with volume-based exchange transaction pricing exist for proprietary volume in a similar manner as for agency-related volume. Even though unlike for agency-related volume

253 See section IV.B.3 for a discussion of the additional incentives introduced by volume-based pricing tiers to order routing decisions.

there are no third-party customers involved in or directly impacted by exchange transaction pricing for principal orders, volume-based pricing tiers still present issues related to competition by granting those exchange members with a high degree of principal trading a competitive advantage in attracting customer order flow.[254]

High-volume exchange members' current tiered pricing advantage also helps them attract customer order flow from non-members and other members. The same pricing advantage applies to members engaged in both agency and principal trading because a member's combined agency-related and principal activity is counted towards its total volume to qualify it for higher tiers, which benefits the member when competing for customers in the market to provide exchange access to others. To the extent that broker-dealers engage in principal bidding to fill customer orders,[255] principal trading may still be related to the market to provide exchange access to investors, albeit in an indirect manner. In this case, the barriers to entry in the brokerage business, including the contribution of volume-based transaction pricing, would continue to apply to principal-based trading.

Whether or not exchange members compete for customer orders or primarily trade in a principal capacity, they face the same fixed costs described in section IV.B.4 for data, hardware, connectivity including co-location services, and other inputs. While these fixed costs may create a substantial barrier-to-entry, volume-based discounts that lower variable costs for trades may increase trading activities and variable profits for the high-volume members. Higher variable profits for high-volume members help to offset the fixed costs of trading. Hence volume-based

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[254] Exchange members compete for the agency-related order flow of non-exchange member customers. Volume-based pricing tiers present a network effect, or positive feed-back loop, in that exchange members with large amount of trading volume find it easier to qualify for higher volume tiers which in turn allows them to attract more customer volume by offering more attractive terms than lower volume competitors.

[255] For example, a broker, instead of working a sell order as an agent for the customer, might just offer the customer a price to buy the shares outright from the customer.

transaction pricing that lowers trading costs for higher volume exchange members may amplify the market shares of those higher volume exchange members. Unlike the proposal which is more likely to adversely affect exchange members with a high volume of agency-related order flow, a ban on volume-based pricing for all orders may also affect exchange members with a high volume of principal order flow.[256] Prohibiting volume-based pricing for principal order flow could lead to a more level competitive environment between exchange members which primarily trade in a principal capacity, including amongst market makers, as differences in fees paid and rebates collected may meaningfully affect the competitive position of the higher volume firms which qualify for more preferential pricing tiers.[257] Moreover, conditional on the extent to which volume-based pricing increases trading volumes, the prohibition of volume-based pricing under this alternative may decrease the investment in faster connectivity and technological prowess (e.g., trading algorithms) that contribute to the competitive edge of principal traders by lowering the value of such investments.

A full ban on volume-based transaction pricing would result in a number of differences in benefits and costs.

Under a full ban on volume-based transaction pricing, there would be no need, and therefore no requirement, for disclosures regarding the number of exchange members qualifying for volume-based tiers, as there would be no volume-based tiers left. Therefore, under this alternative there would be no need for the disclosures required under proposed Rule 6b-1(c) nor would the anti-evasion provision in proposed Rule 6b-1(b) be needed because members would

[256] See section IV.C.1.b.i for a discussion of how the proposed rule could adversely affect exchange members with a high volume of agency-related order flow.

[257] See Letter from John Ramsay, Chief Market Policy Officer, Investors Exchange LLC to Vanessa Countryman, Secretary, Commission (Sept. 20, 2023) ("IEX Letter") (comment letter on File No. S7-30-22), available at https://www.sec.gov/comments/s7-30-22/s73022-262059-619382.pdf.

not be able to evade a broad prohibition through activity such as mismarking orders to qualify for tiered pricing because volume-based tiered transaction pricing would no longer be permitted. As described in sections IV.B.1 and IV.B.5 volume-based pricing tiers contribute to a highly complex trading environment and by banning volume-based pricing for all orders, this alternative may result in simpler markets. Volume-based pricing tiers allow for significant variation across exchanges in the volume-based tiers offered to principal orders, and a prohibition of volume-based price tiering would greatly limit the degree of variation in pricing schedules across exchanges. This lack of variation would make the various trading venues look more similar in terms of the fees charged facilitating the comparison of transaction pricing across exchanges and could lead trading to increasingly congregate on a smaller number of exchanges, those with the highest rebates and lowest fees. Relative to this alternative, the proposal would still allow for a greater variation between exchange pricing schedules since it would continue to allow the application of volume-based pricing tiers to principal order flow. On the other hand, contrary to the proposal, this alternative would be simpler for exchanges to implement than a ban on only tiered transaction pricing for agency-related volume in at least one sense: exchanges would not have to ascertain order capacity codes to separate agency-related orders from proprietary orders when computing member transaction invoices.

The Commission believes that the benefits to lower-volume exchange members described in section IV.C.1.a.i could be increased and extended. In that section, the Commission describes how, consistent with the relevant economic literature, exchanges could set new prices that are between the current lowest and highest prices offered for transactions, benefiting those broker-dealers that currently pay the highest prices. To the extent that these broker-dealers have principal order flow, the change in transaction pricing would apply to that order flow as well, further reducing these broker-dealers' transaction costs.

Similarly, the costs to broker-dealers that currently qualify for the highest tiers, described in section IV.C.1.b.ii would be increased and extended. Banning volume-based exchange transaction tiers would likely impose costs on high-volume exchange members in the form of lower rebates/higher transaction fees. The expanded ban may also contribute to a loss in the competitive advantage of the high-volume members in competing for customers, particularly if the member would have otherwise leveraged discounts on principal volume to attract customers and qualify for higher volume tiers. The number of broker-dealers affected would be greater under this alternative relative to the proposal.[258] If exchanges set transaction fees and rebates for all orders that are between those offered at the highest and lowest volume tiers then exchange members, including those which primarily trade with principal orders would be affected. If exchanges respond to the full ban by offering a new price schedule in which rebates of the lowest tier are increased or transaction fees are decreased, those broker-dealers whose principal-related volume would have continued to qualify for discounts would be subject to higher trading costs for this principal volume.

A broad ban on the application of volume-based transaction pricing might also reduce excessive intermediation, i.e., excessive quoting from high-frequency traders looking to earn rebates, which may be exacerbated through the offer of large rebates, particularly amongst higher volume exchange members.[259]

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258 Exchange members which currently qualify for the best volume-based pricing tiers may be worse off whilst those which fail to do so may be better off.

259 Excessive intermediation here refers to excessive quoting in sufficiently liquid securities in order to earn rebates, which crowds out investors from being able to supply liquidity. Large rebates can increase quoting activity from high-frequency traders looking to earn rebates. Because rebates are paid when a quote is hit

A broad ban would fully prohibit volume-based discounts in the closing auctions, where the tiers are based on a member's overall trading volume, which may benefit both high- and low-volume exchange members if this unbundling results in a more level playing field for intraday trading. As a consequence of unbundling, broker-dealers may be less constrained by the incentive to direct intraday order flow to a primary listing exchange so as to qualify for higher discounts for their principal order flow during the closing auctions. Instead, the broker-dealer may place greater weight on execution quality or rebates received, to the ultimate benefit of the broker-dealer and the customer. Unbundling that weakens primary listing exchanges' market power over intraday trading may also lead to lower average transaction fees for intraday trading, further benefitting broker-dealers.

Banning volume-based transaction fees for both principal and agency-related order flow may expand the range of profitable opportunities for new and smaller exchanges while limiting persistent concentration across the largest exchanges. A ban on volume-based transaction pricing is likely to reduce the degree to which exchange members concentrate their order flow on exchanges by removing the incentive to concentrate order flow caused by volume-based pricing which is discussed in section IV.B.3. As also discussed in section IV.B.3 it is likely the case that principal order flow is more responsive to changes in transaction pricing and so extending the prohibition of volume-based pricing to principal order flow would likely result in less order flow concentration. Compared to the volume-based transaction pricing ban for agency-related volume under the proposal, a full ban on volume-based transaction pricing may result in greater dispersion of order flow across the exchanges, potentially leveling the playing field among larger

by a marketable order, obtaining high priority in the queue at each tick is essential to such strategies. High-frequency, proprietary traders are generally better able to obtain such priority, and consequently investors may have less opportunity to profitably fill their trades using limit orders.

and smaller exchanges in this regard, since a full ban would also remove the incentive to concentrate principal order flow on exchanges offering volume tiers.[260] Unlike the proposal, eliminating volume-based pricing for all orders would reduce the incentive to concentrate order flow for all orders rather than potentially increase the concentration of principal order flow as a means of offsetting the effects of prohibiting volume-based pricing for agency-related order flow.[261]

Banning the tying of volume-based tiering in the closing auctions for both agency-related and principal order flow may further contribute to a dispersion of order flow across exchanges, to the benefit of the less dominant exchanges. Tying execution costs in the closing auction to the firm's overall trading volume on the same platform can alter the level of competition for intraday trading across exchanges.[262] It provides a way for primary listing exchanges, which facilitate closing auctions with large-scale liquidity, to extend their market power to intraday trading. Prohibiting tiers for both agency-related and principal order flow in the closing auctions may further contribute to a shift in order flow towards non-listing exchanges.

A ban on both principal and agency-related flow would constrain the exchanges' ability to adjust their pricing schedules for principal flow in a way that preserves their existing competitive advantages. Shutting down volume-based tiers for both agency-related and principal order flow would limit the potential for exchanges to employ strategic behavior under a ban on

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260 Broker-dealers seeking to execute a proprietary order may choose to route it to an exchange for the purpose of increasing the likelihood of qualifying for a volume tier even if, absent tier considerations, they would choose to route to another exchange. Extending the prohibition of volume-based pricing to principal orders would remove this effect and could result in a greater dispersion in order flow over exchanges, which might increase the competitiveness of less dominant exchanges. See section IV.C.1.a.iii for a discussion of how increased order flow dispersion might benefit lower-volume exchanges.

261 See section IV.D.2.b.

262 See section IV.D.2.c.

only agency-related order flow, since this behavior may otherwise serve to preserve the competitive advantage of the largest exchanges.[263] For example, to counter the potential loss of agency volume, the higher-volume exchanges may re-adjust their pricing schedules for principal order flow. For instance, deeper discounts for increases in principal order flow may serve to both (1) further incentivize the submission of inframarginal principal limit orders and (2) constrain the newer, smaller exchanges' ability to effectively compete with the dominant exchanges. The dominant exchanges' ability to consolidate principal flow increases the attractiveness of their exchange services, which in turn helps the exchanges better attract agency order flow. Exchanges may adapt to the proposal in a way that not only preserves their dominance over the smaller exchanges but also confers even more favorable rebates for top-tiered principal order flow. As previously noted, aside from high-frequency trading firms and market-makers, exchange members with the largest principal order flow also tend to be high-volume players in terms of their agency order flow. Consequently, increased discounts for principal trading activities may potentially offset some of their profit loss from higher transaction fees on agency order flow. The possibility of cross-subsidization where transaction fees on agency-related trading are used to subsidize better pricing for principal trading activities, along with the possibility that broker-dealers may effectively transform agency trades into principal trades if they switch from an agency model to a principal model, means that the high-volume broker-dealers' competitive advantage may persist even under a ban on pricing tiers for agency flow.

A by-product of the full ban on volume-based transaction pricing would be to dampen the possibility that broker-dealers transition to an inventory-holding model, thereby reducing

[263] See section IV.D.1 for discussion of how exchanges may adjust their price schedules.

systemic risk associated with holding inventory.[264] A full volume-based ban may not only lessen the high-volume broker-dealers' tier advantages from principal trading but also limit the increase in inventory risk across these players that shift towards greater reliance on principal trading.

To the extent that volume-based transaction pricing helps exchanges better retain order flow, a ban on both agency-related and principal order flow may increase cost to exchanges in the form of forgone revenue and the cost to broker-dealers in the form of forgone surplus. Section IV.E.1 discusses how volume-based pricing, viewed as a price discrimination mechanism or in a mechanism-design (screening) context, can be an effective way for exchanges to extract increasing levels of order flow and expand total surplus. Some of the forgone order flow loss under a full ban would be order flow streamed to off-exchange venues, as volume-based transaction pricing may help exchanges compete with off-exchange venues.[265] The additional loss of such order flow would increase the costs of the rule for those exchanges, but this change in order flow would be a benefit to the off-exchange venues that receive it instead.

2. Ban Volume-Based Pricing for All Orders Except Registered Market Makers

As an alternative to the proposed prohibition of volume-based transaction pricing for agency-related orders in NMS stocks, the Commission might instead prohibit exchanges from offering volume-based transaction pricing for all volume in NMS stocks, but subject to a carve-out only for displayed liquidity providing orders from exchange registered market makers in their registered or appointed symbols where the registered market maker is subject to minimum

264 For a discussion concerning the incentive broker-dealers may have to carry larger inventory position with which to internalize customer orders see section IV.C.1.b.iv.

265 Id.

continuous quotation and minimum quote width standards that meet or exceed the highest such standards in place among national securities exchanges.[266]

In the current trading environment, many stock exchanges also offer separate volume-based rebates to their registered market makers as a means of incentivizing additional liquidity provision in the form of displayed quotations. For example, one exchange has rebate tiers for its market makers with qualification based on the percent of time the registered market maker quotes at the NBBO and the average size of those quotes in addition to the volume of liquidity provided.[267] Similar to the volume-based pricing tiers offered to non-market-maker exchange members these volume-based market maker pricing tiers are designed to attract the order flow of high-volume market makers who contribute significantly to the overall liquidity on the exchange.[268] As described in section IV.B.1.a, exchanges compete to attract competitively priced liquidity and they do so, in part, by offering variable pricing terms to their registered market makers which award them with better rebates/fees.

This alternative would allow exchanges to incentivize their registered market makers, through transaction pricing incentives, to maintain displayed quotations. It would not permit volume-based exchange transaction pricing incentives for non-displayed quoting activity, including non-displayed orders, orders not in the market maker's assigned or registered symbols (which would not be subject to the quantitative and qualitative market making standards under an

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266 See, e.g., NYSE Rule 104 (for an example of a rule that concerns quotation requirements). Such exchange rules would typically impose, for example, maximum quotation widths (i.e., the spread between the bid to buy and the offer to sell) as well as time at the inside requirements (i.e., time where the market maker must be quoting at least as good as the national best bid and offer).

267 See NYSE pricing schedule, available at https://www.nyse.com/publicdocs/nyse/markets/nyse/NYSE_Price_List.pdf

268 For additional discussion regarding the incentives introduced by volume-based pricing tiers see section IV.B.3.

exchange's rules). It also would not allow exchanges to determine volume-based transaction fees based on total orders or customer orders. Rather, the carve-out would allow volume-based transaction pricing only for the types of orders specified above.

Allowing exchanges to incentivize displayed quotations from their registered market makers allows exchanges to continue to reward members for becoming, and remaining, registered market makers and for posting displayed quotations that are visible to and accessible by all market participants. Those displayed quotations provide an important and central public source of price transparency that can directly benefit investors, as displayed quotations are used for many purposes including informing trading decisions, establishing security valuations, and performing index calculations. Allowing exchanges to continue to offer transaction pricing incentives to encourage public displayed quotes, where those quotes are subject to quantitative and qualitative standards contained in exchange rules, could benefit the public interest.

Because this alternative would involve a prohibition on volume-based exchange transaction pricing for all NMS stocks, the discussion and analysis above about extending the prohibition to also include proprietary volume, including the baseline, the costs and benefits, and the effects, applies equally to this alternative and is hereby incorporated by reference. This ban might also reduce excessive intermediation, i.e., excessive quoting from high-frequency traders looking to earn rebates, which may be exacerbated through the offer of large rebates, particularly amongst higher volume exchange members, though not from registered market makers.

A prohibition on volume-based exchange transaction pricing for both agency-related and principal order flow that carves out displayed liquidity adding orders submitted by exchange registered market makers in their registered or assigned symbols, where the registered market maker is subject to minimum continuous quotation and minimum quote width standards that meet or exceed the highest such standards in place among national securities exchanges, would result in a number of differences in benefits and costs compared to the proposal. Those differences are identical to the differences discussed above for the alternative involving a prohibition on volume-based exchange transaction fees for both agency-related and principal order flow without a carve out, except where otherwise discussed directly below.

Under a ban on volume-based exchange transaction pricing with a registered market maker displayed quote carve out, there would be less need for disclosures regarding the number of exchange members qualifying for volume-based tiers, as fewer members would be eligible for volume-based tiers and it would only apply to displayed quotes. This alternative could be implemented with a transparency measure for those tiers eligible for the displayed quote carve-out, or with no additional disclosures. We request comment on these different possibilities below. While this alternative would allow some volume-based exchange transaction pricing for displayed quoting activity of exchange registered market makers, that is only a subset of principal trading. Under this alternative, volume-based exchange transaction pricing would not be available for liquidity removing orders, non-displayed orders, or orders not in one of the registered market maker's assigned or registered symbols because those are not liquidity-adding quotations for which the registered market maker is subject to the exchanges' quotation requirements. The significantly narrowed scope of what would be subject to the disclosures under Rule 6b-1(c), and the limited subset of members and trading activity to which they would apply, could significantly limit the usefulness of the disclosures to a point where the benefits may not justify the costs. Accordingly, this alternative would not require the proposed transparency disclosures.

Under this alternative, there would be no anti-evasion provision because members would not be able to evade a broad prohibition through activity such as mismarking orders to qualify for tiered pricing because volume-based tiered transaction pricing would no longer be permitted except for orders that exchanges closely track because exchanges need to identify, monitor, and count that activity for compliance with the applicable exchange market making requirements, including quantitative quotation standards. Thus, the same activity that counts towards the registered market maker's quotation would be eligible for tiered pricing under the carve out.

For the same reason, under this alternative, exchanges would not be required to have policies and procedures reasonably designed to detect and deter members from engaging in practices that evade the prohibition because the only type of activity that would be eligible for tiered pricing would be the specially designated activity that counts towards the market maker's displayed quotation requirement.

The Commission does not expect that there would be a substantial increase in the number of exchange registered market makers under this alternative even though the continued allowance of volume-based transaction pricing for exchange registered market makers could make becoming one attractive. The requirements and obligations associated with being a registered market maker likely make the prospect of becoming a registered market maker for the purpose of receiving volume-based pricing on liquidity providing orders not economically viable.[269] Further, because the activity that would be subject to the carve-out would be subject to those exchange market making requirement rules, any attempt to evade the prohibition would result in members engaging in trading activity that would become subject to those market

269 In particular, being a market maker involves regulatory, technology and operational burdens such as having algorithmic trading strategies and servers in order to meet the quoting requirements, and other affirmative obligations of a registered market maker, while doing the fewest possible unwanted trades.

making quoting requirements. Accordingly, an anti-evasion provision would not serve a comparable purpose and would not be necessary with a broad ban that has a limited carve-out for registered market makers.

Similar to the alternative discussed in section IV.E.1 featuring a prohibition on volume-based exchange transaction pricing for both agency-related and principal order flow, this alternative may result in less market fragmentation and simplify markets and that discussion applies equally to this alternative.

As exchanges would continue to be able to offer volume-based transaction pricing to market makers in their registered or appointed symbols where the registered market maker is subject to qualitative and quantitative quotation standards that meet or exceed the highest such standards in place among national securities exchanges, exchanges would be incentivized to adopt more rigorous quantitative and qualitative market making requirements. Consequently, competition could increase for the provision of displayed quotes, which should promote price discovery and liquidity provision to the benefit of investors and the public interest.

For a ban with a limited carve-out for registered market maker quoting, exchanges should readily be able to ascertain the applicable market-making activity because it is subject to existing quantitative exchange quoting requirements. Exchanges would not need to ascertain the capacity of other interest because those would be subject to the broader prohibition. Accordingly, a prohibition with a limited carve-out for registered market makers should also be simpler for exchanges to implement than a prohibition on tiered transaction pricing for agency-related volume.

As discussed in the alternative for a prohibition on volume-based exchange transaction pricing for both agency-related and principal order flow, the prohibition with a limited carve out for registered market makers could also provide benefits to lower-volume exchange members that currently pay the highest prices if exchanges respond by offering lower fees and higher rebates for non-market making order flow. In turn, that could reduce these members' transaction costs. However, members that receive the highest rebates and pay the lowest fees may see their transaction costs increase if exchanges reduce those incentives when they discontinue offering volume-based transaction pricing. A ban with a limited carve-out for registered market makers could preserve some, or all, of the incentivized fee and rebate levels that a registered market maker currently receives.

A ban with a limited carve-out for registered market makers also would prohibit volume-based discounts for both agency-related and principal order flow in the closing auctions except for the registered market maker limited carve out. Similar to the first alternative, members who are not market makers may be less constrained to direct intraday order flow to a primary listing exchange so as to qualify for higher discounts during the closing auctions. Instead, the member may place greater weight on execution quality or rebates received for just intraday order flow, to the ultimate benefit of the broker-dealer and the customer. Unbundling that weakens primary listing exchanges' market power over intraday trading may also lead to lower average transaction fees for intraday trading, further benefitting broker-dealers that are not market makers.

The distortions in intraday routing decisions faced by principal traders, as mentioned in section IV.B.3, do not apply in the same manner to registered market makers, for whom market making requirements can provide incentives to concentrate order flow on particular exchanges.

Because registered market maker quoting currently involves passive displayed liquidity provision, registered market makers cannot direct flow to an exchange intraday in the same manner that a non-market making member can, though they can increase their quoting activity in the expectation that they would receive more executions. Some types of exchange registered market makers face more significant quoting obligations and trading volume requirements than other types of exchange registered market makers. To meet stringent obligations, those types of market makers might be more reluctant to reroute orders to exchanges for which they are not designated market makers. Compared to non-market making broker-dealers, tying discounts in the closing auction on intraday volume might not have as large an effect at reducing market makers' surplus. While a full ban could result in greater dispersion in trading activities across exchanges and a loss of order flow to off-exchange venues, a limited carve-out for registered market makers could induce these members to concentrate more quoting activities on certain exchanges. Under this alternative, new and lower-volume exchanges could offer incentives to attract registered market maker members and could combine that with higher market making standards. The adjustments in market makers' obligations and benefits might result in the exchange more frequently setting the best prices and having more available liquidity, which would attract liquidity-removing order flow and increase the exchange's market share.

Under the ban with a limited carve-out for registered market makers, competitive advantages for high-volume broker-dealers might still exist, but the advantage would be largely limited to registered market makers. Unlike ordinary principal trading that only involves the proprietary trading member, displayed liquidity providing orders from exchange registered market makers in their registered or appointed symbols benefits investors and markets by contributing to price formation and liquidity provision. Accordingly, a limited carve-out for registered market makers could allow exchanges to continue to incentivize their members to become and remain registered market makers and quote and thereby confer a broader benefit to the market generally compared to an incentive on non-market-making principal trading.

To the extent that volume-based transaction pricing helps exchanges better retain order flow, a prohibition on volume-based exchange transaction fees for both agency-related and principal order flow with a limited carve out for registered market makers may, as is the case for the first alternative, increase costs to dominant exchanges in the form of forgone revenue and the cost to high-volume members in the form of forgone surplus. A ban with a limited carve-out for registered market makers would mitigate these increased costs by allowing exchanges to offer volume-based pricing to their registered market makers on their displayed liquidity-adding volume in their registered or assigned symbols where applicable market making standards apply, thus potentially retaining some of that transaction volume.

3. Proceed with Transparency Provisions for All Orders without Tiers Prohibition

The proposal would prohibit volume-based transaction pricing for agency-related flow and would mandate transparency for principal-flow. Alternatives 1 and 2 would broaden the volume-based transaction pricing prohibition, making transparency irrelevant for Alternative 1, though possibly relevant for Alternative 2. Alternatively, the Commission could opt not to prohibit volume-based tiers for either agency or principal-related volume in NMS stocks, but rather expand the disclosures under proposed Rule 6b-1(c) to all orders.[270] Specifically, under this alternative, the Commission would require exchanges to disclose periodically certain

[270] The SEC Investor Advisory Committee previously recommended that the Commission enhance disclosures to provide transparency about rebate tier practices at exchanges. Specifically, it recommended that the Commission receive monthly disclosures from exchanges concerning the volume of trades that receive a rebate and the rebate amounts broken down by volume ranges. In addition, it recommended public disclosure on an aggregated basis of rebate information broken down by tiers. See Recommendation of the SEC Investor Advisory Committee Regarding Exchange Rebate Tier Disclosure (Jan. 24, 2020), available at https://www.sec.gov/spotlight/investor-advisory-committee-2012/exchange-rebate-tier-disclosure.pdf. See also supra Request for Comment No. 24 (requesting comment on additional items for the monthly transparency disclosures, including the volume of shares qualifying for each tier, the dollar amounts involved, and the average transaction fee paid and rebate received by members).

information if they offer volume-based transaction pricing for any NMS stocks, for both principal and agency-related orders.[271]

Expanding the disclosure under proposed Rule 6b-1(c) to all volume in NMS stocks, the added transparency would have benefits similar to those of Rule 6b-1(c) described in the proposal.[272] It would allow interested persons greater access to information about the eligibility of each exchange's members for its volume-based transaction pricing tiers. It would improve the information set for those commenting during the SRO filing process. These comments, in turn, might assist the Commission in determining whether a filing is consistent with the Exchange Act. As the impact of their transaction pricing schedules would become evident to other members and the commenting public, greater transparency could perhaps place pressure on exchanges to adopt less "bespoke" volume-based transaction pricing.[273] It is possible that the appearance of a pricing scheme which appears to disproportionately favor a small number of exchange members might make an exchange more likely to voluntarily adopt price schedules with a more even distribution of tier qualification.

One issue that is unlikely to be addressed by transparency alone would be the self-reinforcing competitive advantage for high-volume exchange members, including high-volume firms that trade in a principal capacity. Among lower-volume broker-dealers, those who route some or all of their orders through higher-volume exchange members serve to reinforce the competitive advantage of high-volume exchange members. Compared to Alternatives 1 and 2, transparency alone might not help level the playing field between exchanges that employ

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271 The Commission also could expand the disclosures to all NMS securities, which would include listed options in addition to NMS stocks.

272 See supra section IV.C.3.a.

273 See supra section IV.C.3.b.ii for additional discussion of the possible effect that the proposed disclosures may have on exchange pricing.

volume-based tiers and those that do not.[274] In addition, the transparency-only alternative might not address the incentive for members of more than one exchange to concentrate their trading, particularly agency-related orders, on one particular exchange in order to qualify for that exchange's volume-based tiers, so as to achieve lower fees and higher rebates. Likewise, this alternative would be unlikely to address the related conflict of interest between members and customers that can arise when the member executes an agency-related order (i.e., the incentive for a member to route the order to one particular exchange over others and retain the benefit for itself, assuming it does not pass through that better exchange transaction pricing to its customer). Finally, this alternative is unlikely to address the incentive for a listing exchange to exploit demand for participating in the closing auction by offering discounts on auction orders to members who send volume, particularly agency-related volume, into the intraday trading session—a practice that may contribute to listing exchanges preserving or extending their market power at the expense of non-listing exchanges and potentially exchange members. However, compared to the proposal, this alternative would not lead to an advantage of principal brokerage models over agency ones. We request comment below on the relative benefits of the proposed ban versus transparency and mechanisms through which transparency would address the problems identified in the proposal.

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274 As discussed in sections IV.B.1.b and IV.B.2, it would be more difficult for exchanges that do not employ volume-based pricing to effectively compete against those that do, since without volume-based pricing exchange members would not be incentivized to concentrate their order flow on those exchanges. Additionally, lower volume exchanges that are newer also face competitive hurdles because it would be more costly for them to offer higher tier rebates similar to the higher volume exchanges due to their lower trading volume.

4. Banning the Linking of Volume-based Tiers for Closing Auctions to Consolidated Volume

The Commission might ban conditioning closing auctions' transaction fees on consolidated volume. Under this alternative, current volume-based discounts for trading during regular hours would continue, but execution costs for the closing auction would no longer be based on a member's continuous order book volume. Offering discounts for closing auction pricing linked to overall volume is a practice known as "auction linked pricing."

This ban would likely alter the level of inter-exchange competition, diverting more intraday order flow to small, non-listing exchanges. Conditional pricing, or qualifications for price discounts on one product depending on the purchase levels of other products, has been shown to harm competition when firm(s) with market power are able to foreclose rival(s) from a portion of the market or drive rivals out of the market entirely.[275] Similar intuition may apply to an exchange context under the current baseline, where price discounts for participation in the closing auctions are conditioned on consolidated volume. Because conditional pricing for closing auctions provides incentive for broker-dealers to stream intraday volume to the same listing exchanges, tying provides a way for listing exchanges with market power over their closing auctions to partially expand their dominance to intraday trading. A ban on conditional pricing may provide a more level playing field for inter-exchange competition and result in lower transaction fees for the average broker-dealer participating during regular trading hours.

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[275] Dennis W. Carlton and Michael Waldman, "The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries", 33 RAND J. ECON. 194(Summer 2002). Michael D. Whinston, "Tying, Foreclosure, and Exclusion", 80 AM. ECON. REV. 837 (Sept. 1990). See also a discussion of tying from W. Kip Viscusi, Joseph E. Harrington, and David E. M. Sappington, ECONOMICS OF REGULATION AND ANTITRUST, Chapter 7 Vertical Mergers and Vertical Restraints, pages 296 – 312 (5th ed. 2018).

The ban would likely benefit small, non-listing exchanges at the cost of primary listing exchanges. Tying provides a way for listing exchanges to soften competition and potentially charge higher transaction fees for trading during regular hours, compared to a regime where exchanges compete for order flow for the "standalone" market for intraday trading. Un-tying execution cost in the closing auction to total volume reduces a broker-dealer's incentive to route to a primary listing exchange during regular hours, in anticipation of participating in the closing auction on the same platform. Unbundling the auction and continuous order book trading decisions could increase non-listing exchanges' profits at the expense of the listing exchanges' profits.

Prohibiting tying auction fees to broker-dealers' overall volume may alter consumers' choices in a way that leads to improvement of broker-dealers' welfare. To qualify for lower fees during closing auctions, broker-dealers may make intraday order routing decisions that are suboptimal. Unbundling the closing auction trading decisions and order routing choices during regular hours may ultimately be in the broker-dealers' best interests, especially in combination with the fact that competition across exchanges may lower average transaction fees during regular trading hours.

Removing the conditioning of closing auction tiers on consolidated volume removes an additional pricing advantage for high-volume broker-dealers, who may already be trading at dramatically reduced prices because of their tier qualifications from intraday trading. Tiers applied to trading volume from broker-dealers' continuous order book confers an outsized pricing advantage to the high-volume broker-dealers. One concern is that the interaction of the high-volume broker-dealers' tiered pricing advantage and high fixed market data and connectivity costs creates significant disadvantage for lower-volume firms.[276] Pricing tiers for the closing auctions may accentuate the barrier-to-entry for lower-volume firms, in an industry that has seen no salient growth of nascent firms in recent years. Prohibiting volume-based pricing for the closing auctions removes one potential source of barrier-to-entry for lower-volume broker-dealers.

Among incumbent exchange members participating in the closing auctions, prohibiting "auction linked pricing" may increase low-volume broker-dealers' profits derived from closing auctions while decreasing high-volume broker-dealers' profits. Unlinking transaction fees for closing auctions to member's overall trading volume may induce exchanges to reduce the execution cost differentials between high- and low-volume participants in the closing auctions. Because the execution cost for low-volume members may be reduced, these members who share their reduced input costs with customers can better attract agency order flow from investors and non-members. On the other hand, prohibiting "auction linked pricing" may lessen high-volume members' advantage in directing agency order flow to the closing auctions.

Removing only the closing auctions' volume criteria that are tied to overall trading volume preserves the volume-based pricing schemes for intraday trading, a potential dimension along which firms compete and a practice that may be welfare-enhancing. For a different market setting where the authors examine pricing schedules that embody discounts for greater demand or utilization, the authors find that firms compete more aggressively to offer size discounts in response to increased competition from rivals.[277] The paper highlights volume-based discount as a channel through which newspaper firms compete with one another as means to retain orders for

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276 See supra section IV.B.4.a.

277 Meghan Busse and Marc Rysman, "Competition and Price Discrimination in Yellow Pages Advertising", 36 RAND J. ECONS. 378 (2005).

advertising. This observation, along with the fact that price discrimination schemes may enhance both the price-setting firms' and the customers' overall welfare if they lead to greater demand,[278] suggests that volume-based tiers may potentially be a welfare-enhancing outcome of competition across exchanges. Despite the caveat that high-volume broker-dealers may disproportionately benefit from volume-based discounts, pricing tiers for intraday trading may be worth preserving because of their welfare-enhancing potentials. On the other hand, a number of studies have shed light on ways in which tying prices for complementary goods (or markets) can be effectively used by firms to (1) extract more surplus from customers[279] or (2) expand its market power from a dominant market to complementary markets.[280] Without salient cost synergies from bundling (i.e., concentrating limit book order flow and participation in closing auction on the same listing exchange) or an enhancement in overall demand for broker-dealers, welfare-reducing tying justifies a ban on linking tiers for closing auctions to intraday trading volumes.

5. Require Disclosures of Volume-Based Pricing in Proprietary Volume in NMS Stocks to be Posted on Exchange Websites or Submitted Through a Different System

The Commission considered requiring equities exchanges post the fee and rebate tiers disclosures in Inline XBRL on their websites, either in addition to, or instead of, filing the

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278 See supra section IV.D.1.

279 Gregory S. Crawford, "The Discriminatory Incentives to Bundle in the Cable Television Industry", 6 QUANTITATIVE MKTG. & ECON. 41 (2008).

280 See Katherine Ho, Justin Ho, & Julie Holland Mortimer, "The Use of Full-Line Forcing Contracts in the Video Rental Industry", 102 AM. ECON. REV. 686 (2012), for an empirical analysis. See Dennis W. Carlton and Michael Waldman, "The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries", 33 RAND J. ECON. 194(Summer 2002), for theoretic analysis. Michael D. Whinston, "Tying, Foreclosure, and Exclusion", 80 AM. ECON. REV. 837 (Sept. 1990). See also a discussion of tying from W. Kip Viscusi, Joseph E. Harrington, and David E. M. Sappington, ECONOMICS OF REGULATION AND ANTITRUST, Chapter 7 Vertical Mergers and Vertical Restraints, 296 – 312 (5th ed. 2018).

disclosures in EDGAR.[281] Requiring exchanges to place the structured fee tiers disclosures only on exchange websites would relieve exchanges of the need to apply for EDGAR filing access and adjust their compliance systems to submit the disclosures in EDGAR, thus reducing costs on exchanges. However, a website posting requirement would also decrease the ease of retrieving and consolidating the new disclosures, because data users would need to visit each equities exchange's website to retrieve the disclosed information and manually incorporate those disclosures into datasets (or pay a third party to do so). In addition, the data quality associated with the disclosures could decrease under a website-only requirement, because website postings would not be subject to programmatic checks for nondiscretionary errors (such as text where there should only be numbers). Such accessibility and data quality issues could impede the objective of the proposal, which is to provide the Commission and the public with insight into the application of an exchange's volume-based transaction pricing schedule and to provide information that could facilitate assessment of the level of competition among exchanges and the impact of pricing tiers on intermarket competition. Requiring exchanges to place the structured fee tiers disclosures only on exchange websites would relieve exchanges of the need to apply for EDGAR filing access and adjust their compliance systems to submit the disclosures through EDGAR, thus reducing burdens on exchanges.

Requiring exchanges to place the structured disclosures both on exchange websites and on EDGAR would not relieve exchanges of the need to apply for EDGAR filing access and

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[281] Certain Commission rules require registrants to post structured disclosures on their individual websites. For example, market centers (including equities exchanges) are required to post order execution disclosures on their websites in pipe-delimited ASCII. See 17 CFR 242.605(a)(1) and (2); Securities and Exchange Commission File No. 4-518 (National Market System Plan Establishing Procedures Under Rule 605 of Regulation NMS). Broker-dealers are required to post order routing disclosures on their websites using a custom XML schema designed by the Commission for those disclosures. See 17 CFR 242.606. Nationally recognized statistical rating organizations are required to post credit rating history disclosures on their websites in XBRL. See 17 CFR 240.17g-7(b)(3).

adjust their compliance systems to submit the disclosures in EDGAR, and thus would not reduce costs on exchanges. In addition, while adding a website disclosure requirement may make it likelier that investors accustomed to accessing exchange websites for transaction pricing schedules would access those disclosures, the Commission believes the fee and rebate tiers information, when submitted electronically to the Commission, likely would be equally accessible to the parties most likely to access the information on a regular basis (e.g., broker-dealer exchange members, financial data aggregators and other market participants).[282]

Alternatively, the Commission could require the disclosures to be submitted through another filing system, specifically the Electronic Form Filing System ("EFFS") through which exchanges presently file their proposed pricing changes on Form 19b-4. Using EFFS would reduce the burdens on exchanges by relieving them from the need to apply for EDGAR filing access and adjust their compliance systems to submit the disclosures using EDGAR. Use of EFFS would allow the Commission to centralize the collection of the disclosures and could still allow for the application of programmatic checks for nondiscretionary errors. However, EFFS would need to be expanded to accept the disclosures in Inline XBRL format, and a mechanism would need to be implemented to make the disclosures available to the public.

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282 The Commission recently proposed rules to require certain registered entities, including exchanges, to file new cybersecurity risk and incident history disclosures in EDGAR and post copies of those disclosures on their individual websites. See Cybersecurity Risk Management Rule for Broker-Dealers, Clearing Agencies, Major Security-Based Swap Participants, the Municipal Securities Rulemaking Board, National Securities Associations, National Securities Exchanges, Security-Based Swap Data Repositories, Security-Based Swap Dealers, and Transfer Agents, Securities Exchange Act Release No. 97142 (Mar. 15, 2023), 88 FR 20212 (Apr. 5, 2023). In the proposing release, the Commission stated its belief that retail investors (as well as other market participants) would have an interest in accessing the cybersecurity disclosures. See id. at 20308.

6. Require a Different Structured Data Language for the Disclosures of Volume-Based Pricing in Proprietary Volume in NMS Stocks

The Commission also considered requiring that exchanges make the disclosures in a different machine-readable structured data language than Inline XBRL. The Commission considered requiring equities exchanges to submit the proposed disclosures in an eXtensible Markup Language ("XML")-based data language specific to that form ("custom XML" or, here, "Tiers-specific XML"). Currently, certain registrants make filings in EDGAR in custom XML data languages that are specific to particular forms.[283] For custom XML filings, filers typically are provided the option to either submit the filing directly to the EDGAR system in the relevant custom XML data language, or to manually input the information into a fillable web-based form developed by the Commission that converts the completed form into a custom XML document.

As with the proposed Inline XBRL requirement, a custom XML requirement would allow the Commission to download the proposed information in a structured, machine-readable form, facilitating efficient access, organization, and evaluation of the disclosed information. Furthermore, if any filers were to use the fillable web-based form to provide their information under a custom XML requirement, those filers would forgo the compliance costs related to structuring their fee and tier-based disclosures.

However, the Commission believes the use of Inline XBRL for the fee and rebate tiers disclosures would provide advantages that the use of Tiers-specific XML would not. First, XBRL uses and implements existing accounting and reporting standards,[284] which facilitates the

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283 For example, security-based swap entities file Form SBSE in a custom XML language specific to that form. See section 8.2.19 of the EDGAR Filer Manual (Volume II) version 66 (Jun. 2023).

284 See Donna Johaneman & Louis Matherne, Harmonizing Accounting and Data Standards, XBRL.us, Dec. 23, 2019, available at https://xbrl.us/harmonizing-accounting-data-standards/ ("As a data standard, [XBRL] is designed to support an existing accounting standard by unambiguously conveying details about that

coordination and sharing of financial information. Thus, Inline XBRL would be well-suited to handle data about proprietary volume-based pricing tiers on equities exchanges. Second, the Commission believes creating a custom XML schema for the fee and rebate tiers disclosures would be less efficient than leveraging the existing Inline XBRL architecture, because doing so would involve re-creating features that XBRL already offers through its taxonomies and related data elements within those taxonomies.[285] Lastly, the use of a standard structured data language such as Inline XBRL would allow equities exchanges and market participants to leverage an existing ecosystem of software tools, service providers and related infrastructure that support XBRL tagging.[286] Thus, the Commission believes the use of a custom XML schema designed specifically for a particular regulatory form, while an improvement over unstructured forms, would not provide the same level of benefit as the use of a global, interoperable standard data language such as Inline XBRL.

7. Remove Structured Data Language Requirement for Disclosures of Volume-Based Pricing in Proprietary Volume in NMS Stocks

The Commission also considered not including the proposed requirement that exchanges submit the disclosures in a structured data language. Such an alternative would result in an

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accounting standard reporting requirement."). For example, the Financial Accounting Standards Board assumed the ongoing development of the Generally Accepted Accounting Principles ("GAAP") Taxonomy from the SEC in 2010 to keep it current with GAAP. *XBRL:* What Is it? Why the FASB? Who Uses It?, FASB.org, available at https://www.fasb.org/page/PageContent?pageId=/staticpages/what-is-xbrl.html&isstaticpage=true; see also IFRS Accounting Taxonomy 2023, XBRL.org, available at https://www.xbrl.org/news/ifrs-accounting-taxonomy-2023/.

285 See, e.g., Standard Taxonomies, SEC.gov, available at https://www.sec.gov/info/edgar/edgartaxonomies; *Taxonomies*, XBRL.us, available at https://xbrl.us/home/filers/sec-reporting/taxonomies/.

286 XBRL International is a global, nonprofit consortium that oversees the XBRL standard. Introduction to XBRL, XBRL.org, available at https://www.xbrl.org/the-standard/what/an-introduction-to-xbrl/. XBRL US is a jurisdiction of XBRL International. See also Membership Organizations, XBRL.us, available at https://xbrl.us/join-us/membership/xusmembers/; Membership List, XBRL.org, available at https://www.xbrl.org/the-consortium/about/membership-list/.

incremental reduction in cost to equities exchanges associated with filing the fee tiers disclosures. However, the absence of any structured data language requirement would significantly reduce the benefits of the proposal because the fee tiers data would be more difficult for the Commission and market participants to assemble, review, and analyze. The use of HTML, ASCII, PDF, or another unstructured format for the proposed disclosures would force user of the data, including Commission staff and market participants, to manually transcribe information from the disclosures into datasets for aggregation, analysis, and comparison of the proprietary volume-based pricing data, or pay a third party to do so. This would impede data users such as financial analysts from producing reports and analyses about equities exchange fee tiers practices and trends that market participants could find useful.

F. Request for Comment

The Commission is sensitive to the potential economic effects, including costs and benefits, of the proposed rule. The Commission has identified certain costs and benefits associated with the proposal and requests comment on all aspects of its preliminary economic analysis, including with respect to the specific questions below. The Commission encourages commenters to identify, discuss, analyze, and supply relevant data, information, or statistics regarding any such costs or benefits. In addition, the Commission has the following specific requests:

31. Is there a lack of transparency for exchange price schedules? Does a lack of information on how many exchange members qualify for each volume-based tier in a given month inhibit public comment on exchange fees?
32. The Commission discussed above how the presence of volume-based transaction pricing on exchanges introduces a potential conflict of interest, because it gives

broker-dealers an incentive to route agency-based volume in a way that minimizes exchange fees for the broker-dealer. Is such a conflict of interest present? The Commission requests comment on the impact of such potential conflicts of interest.

33. Does volume-based transaction pricing promote concentration in the broker-dealer business? Specifically, does it offer an advantage to larger broker-dealers that makes it harder for small broker-dealers to compete? Does this make it more difficult for new broker-dealers to enter the NMS equity brokerage business than it would be without volume-based transaction pricing?
34. Do commenters believe that there are relevant factors which were not discussed in the Commission's characterization of the relevant baseline for the proposed rule? Please describe any additional baseline details that you believe are relevant for understanding the impact of the proposed rule.
35. Is the Commission's description of current exchange pricing accurate, including the practice of volume tiering and using auction linked pricing to attract volume outside of the auction? Are there additional details about these practices which you believe are relevant to understanding their impact?
36. Do fees and rebates play a role in attracting order flow to exchanges? How sensitive are market participants to fees and rebates when making decisions about where to route orders? Do transaction fees and rebates significantly influence an exchange's market share?
37. What is the role of volume-based transaction pricing and its impact on what different market participants pay?

38. Does tying closing auction prices to intraday volume have an impact on the market share exchanges are able to obtain for intraday volume?

39. How does volume-based transaction pricing impact order routing incentives for broker-dealers? Does the impact involve a potential conflict of interest?

40. Is the Commission's characterization of the market to provide access to exchanges to non-members through things like sponsored access and direct market access accurate? Are there any relevant factors which were not discussed in the Commission's characterization of the baseline for the market to provide exchange access?

41. What is the current effect of volume-based tiering on broker-dealer services? Does current volume-based tiering create a barrier to entry in the market for NMS equity brokerage services?

42. Is there substantial dispersion in the size of broker-dealer exchange members? What effect does such dispersion have on the market to provide exchange access and the role of volume-based transaction pricing in that market?

43. What is the current level of tier transparency? Does the lack of public knowledge of the number of exchange members that qualify for each tier affect the ability of the public to submit informed comments on exchange fees?

44. Are there any additional benefits from increased transparency the Commission did not discuss?

45. Is the Commission's assessment of the benefits of EDGAR and Inline XBRL requirements accurate?

46. What other benefits or costs to investors may arise from exchanges voluntarily adopting different price schedules after the implementation of the transparency provisions?

47. Do commenters agree with the Commission's assessment of the implementation costs associated with the transparency provision of the proposed rule? Are there any technical aspects which were not discussed which would affect any implementation costs? Do commenters agree with how the Commission has characterized the costs associated with the requirement for structured data, and the EDGAR filing requirement?

48. Will there be reputation costs and other monetary costs related to changes exchanges may make to their tiered pricing in response to the transparency requirements, as the Commission describes above?

49. Are there any additional benefits or costs of the transparency provisions that the Commission did not discuss?

50. Do commenters agree with the Commission's assessment of the benefits stemming from the effects of the volume-based prohibition on agency-related order pricing and competition among broker-dealers? In particular, would lower-volume exchange members end up with lower fees and higher rebates under such a ban? Would a flat fee and rebate for agency-related volume increase competition among broker-dealers to provide exchange access? Would investors benefit from the lower prices for lower-volume exchange members and lower barriers to entry in the NMS equity brokerage business?

51. Would prohibiting the application of volume-based pricing for agency-related order flow and the proposed disclosure provisions promote or impede competition between exchanges? Does the Commission adequately capture the costs and benefits resulting from the effect of the proposed rule on competition among exchanges?
52. What impact would an elimination of volume-based pricing on agency-related order flow have on the NBBO, including the spread width and depth of displayed interest at the NBBO?
53. Would the prohibition of volume-based pricing for agency-related order flow affect order-routing decisions by reducing the conflict of interest between members and customers in agency order routing?
54. Would the execution quality of agency-related orders improve by reducing the incentive to concentrate order flow on a small number of exchanges?
55. Do commenters agree with the Commission's assessment of the costs from the effect of the rule on competition among broker-dealers? Do you agree that the rebates earned will likely decrease and the fees paid will increase for the higher-volume broker-dealer members? Would these costs also affect non-members that work with higher-volume exchange members to trade?
56. Do commenters agree with the Commission's description of the indirect costs and reduction in efficiency which may result from a reduction of order-flow executed by higher-volume exchange members on exchanges?
57. How likely is the proposed prohibition of volume-based pricing for agency-related order flow to result in broker-dealers moving to an inventory model? Do commenters

agree with the Commission's assessment of the costs of the proposed rule resulting from increased principal trading?

58. Would the proposed rule affect the ability of exchanges to compete with off-exchange venues? Do commenters agree with the Commission's assessments of the costs from order flow potentially moving to off-exchange venues?
59. Are there any additional benefits or costs from the prohibition of volume-based transaction pricing for agency-related volume that you believe the Commission did not discuss?
60. Do commenters agree with the Commission's assessment of the benefits and costs from the proposed rule's requirements that exchanges adopt rules and policies and procedures to prevent evasion?
61. Do commenters agree with the Commission's assessment of the impact of the proposed rule on efficiency, competition, and capital formation?
62. The Commission requests comment on the effects of an alternative that implements a ban on volume-based transaction pricing for all exchange order types.
63. How important are the various privileges afforded to registered market makers by the exchanges to their willingness to participate and ability to function effectively? What is the effect of registered market makers on exchange liquidity?
64. Do commenters believe that volume-based transaction pricing serves a unique role in the function of registered market makers? In particular, do such tiers improve the participation of registered market makers, or improve their performance on exchange as a market maker? Do such tiers create a barrier to entry for smaller registered

market makers? What is the effect of volume-based tiering on competition among registered market makers to provide liquidity in a given security?

65. If the Commission prohibited the application of volume-based pricing for all order types with a carve-out for the application of volume-based pricing only for registered market makers, would requiring the monthly disclosure of the number of members which qualify for any tiers which fall within the carve-out provide meaningful information? Could knowledge of the distribution of tier qualification across registered market makers influence order-routing decisions?
66. How impactful would the proposed disclosure provisions, expanded to apply to all volume-based tiers, without any prohibition on the application of volume-based pricing, be on addressing competitive imbalances between broker-dealers? Do there exist data to support conclusions on such impacts? Would the proposed disclosure provisions influence order routing decisions by exchange members?
67. Would the information revealed through the monthly disclosure of the number of exchange members qualifying for each pricing tier, absent any prohibition of the application of volume-based pricing, meaningfully influence future exchange transaction price schedules? Would the disclosures promote exchange competition? Do there exist data to support conclusions on such influence?
68. The Commission requests comment on all aspects of the costs of the proposal to require equities exchanges to provide the proposed tiers disclosures electronically on EDGAR in Inline XBRL. Are there costs that the Commission has over- or understated? Are there additional costs that the Commission has not mentioned? Please explain your answer.

69. Are the Commission's assessment of the costs of the requirements to provide the proposed disclosures in Inline XBRL correct? Please explain why or why not. Would the use of a different structured data language impact the cost of the structuring requirement? Please explain why or why not.

70. Is the Commission's assessment of the costs of the requirements to provide the disclosures to the public using EDGAR correct? Please explain why or why not. How would the costs change if the Commission required exchanges to post the disclosures on their individual websites rather than submit the disclosures using EDGAR?

71. Should the proposed fee tiers disclosures be provided in a structured data language other than Inline XBRL? For example, should exchanges structure the proposed fee tiers disclosures using a custom XML schema specific to those disclosures? Why or why not? Alternatively, should exchanges structure the proposed fee tiers disclosures using a pipe-delimited ASCII format rather than Inline XBRL? Why or why not? Should the Commission instead require the proposed fee tiers disclosures be provided in an unstructured format? Are there other alternatives related to structured data languages that would be appropriate? How would the use of a different language impact the usability and accessibility of the tables for data users? What time or expense is associated with the recommended structured data language? Would a particular structured data language require any filers or users to license commercial software they otherwise would not, and, if so, at what expense?

V. Regulatory Flexibility Act Certification

The Regulatory Flexibility Act ("RFA")[287] requires Federal agencies, in promulgating rules, to consider the impact of those rules on small entities. Section 603(a)[288] of the Administrative Procedure Act,[289] as amended by the RFA, generally requires the Commission to undertake a regulatory flexibility analysis of all proposed rules, or proposed rule amendments, to determine the impact of such rulemaking on "small entities."[290] Section 605(b) of the RFA states that this requirement shall not apply to any proposed rule or proposed rule amendment which, if adopted, would not have a significant economic impact on a substantial number of small entities.[291]

The proposed rule would apply only to national securities exchanges registered with the Commission that trade NMS stocks. Rule 0-10(e) states that the term "small business," when referring to an exchange, means any exchange that has been exempted from the reporting requirements of 17 CFR 242.601 (Rule 601 of Regulation NMS), and is not affiliated with any person (other than a natural person) that is not a small business or small organization as defined in Rule 0-10.[292] The exchanges subject to this proposed rulemaking do not satisfy this standard.

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287 5 U.S.C. 601 et seq.

288 5 U.S.C. 603(a).

289 5 U.S.C. 551 et seq.

290 The Commission has adopted definitions for the term "small entity" for purposes of Commission rulemaking in accordance with the RFA. Those definitions, as relevant to this proposed rulemaking, are set forth in 17 CFR 240.0-10 (Rule 0-10). See Securities Exchange Act Release No. 18451 (Jan. 28, 1982), 47 FR 5215 (Feb. 4, 1982) (File No. AS-305).

291 See 5 U.S.C. 605(b).

292 See 17 CFR 240.0-10(e).

Therefore, none of the exchanges that would be subject to the proposed rule are "small entities" for purposes of the RFA.[293]

For the above reasons, the Commission certifies that proposed Rule 6b-1 would not have a significant economic impact on a substantial number of small entities for purposes of the RFA.

The Commission requests comment regarding this certification. In particular, the Commission solicits comment on the following:

72. Do commenters agree with the Commission's certification? If not, please describe the nature of any impact on small entities and provide empirical data to illustrate the extent of the impact.

VI. Consideration of Impact on the Economy

For purposes of the Small Business Regulatory Enforcement Fairness Act of 1996, or "SBREFA,"[294] the Commission must advise OMB whether a proposed regulation constitutes a "major" rule. Under SBREFA, a rule is considered "major" where, if adopted, it results in or is likely to result in (1) an annual effect on the economy of $100 million or more; (2) a major increase in costs or prices for consumers or individual industries; or (3) significant adverse effects on competition, investment, or innovation. The Commission requests comment on whether this proposal would be a "major rule" for purposes of the SBREFA. The Commission also requests comment on the potential effect of proposed Rule 6b-1 on the U.S. economy on an annual basis; any potential increase in costs or prices for consumers or individual industries; and

293 See also Securities Exchange Act Release Nos. 82873 (Mar. 14, 2018), 83 FR 13008, 13074 (Mar. 26, 2018) (File No. S7-05-18) (Transaction Fee Pilot for NMS Stocks Proposing Release); 55341 (May 8, 2001), 72 FR 9412, 9419 (May 16, 2007) (File No. S7-06-07) (Proposed Rule Changes of Self-Regulatory Organizations proposing release); Access Fee Proposal, supra note 17, at 87 FR at 80357.

294 Pub. L. 104-121, Title II, 110 Stat. 857 (1996) (codified in various sections of 5 U.S.C., 15 U.S.C. and as a note to 5 U.S.C. 601).

any potential effect on competition, investment, or innovation. Commenters are requested to provide empirical data and other factual support for their views to the extent possible.

Statutory Authority

Pursuant to the Exchange Act (15 U.S.C. 78a *et seq.*), and particularly sections 2, 3(b), 5, 6, 11, 11A, 15, 15A, 17, 19, 23(a), 24, and 36 thereof, 15 U.S.C. 78b, 78c(b), 78e, 78f, 78k, 78k-1, 78*o*, 78*o*-1, 78q, 78s, 78w(a), 78x, and 78mm, the Commission is proposing to amend §§ 232.101 and 232.405 and is proposing new § 240.6b-1, as set forth below.

List of Subjects

17 CFR Part 232

Electronic filing, Reporting and recordkeeping requirements, Securities.

17 CFR Part 240

Fees, Reporting and recordkeeping requirements, Securities.

Text of the Proposed Rules

In accordance with the foregoing, the Securities and Exchange Commission proposes to amend title 17, chapter II of the Code of Federal Regulations as follows:

PART 232— REGULATION S-T — GENERAL RULES AND REGULATIONS FOR ELECTRONIC FILINGS

1.The general authority citation for part 232 continues to read as follows:

Authority: 15 U.S.C. 77c, 77f, 77g, 77h, 77j, 77s(a), 77z-3, 77sss(a), 78c(b), 78*l*, 78m, 78n, 78*o*(d), 78w(a), 78*ll*, 80a-6(c), 80a-8, 80a-29, 80a-30, 80a-37, 80b-4, 80b-6a, 80b-10, 80b-11, 7201 *et seq.*; and 18 U.S.C. 1350, unless otherwise noted.

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2. Amend §232.101:

a. In paragraph (a)(1)(xxx), by removing the word “and” from the end of the paragraph;

b. In paragraph (a)(1)(xxxi), by removing the period and adding it its place "; and"; and

c. By adding paragraph (a)(1)(xxxii).

The addition reads as follows:

§ 232.101 Mandated electronic submissions and exceptions.

(a) * * *

(1) * * *

(i) * * *

(xxxii) Disclosures provided pursuant to § 240.6b-1(c) of this chapter.

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3. Amend §232.405 by:

a. Revising the introductory text, and paragraphs (a)(2), (a)(3)(i) introductory text, (a)(3)(ii), (a)(4), and (b)(1) introductory text;

b. Adding paragraph (b)(6); and

c. Revising Note 1 to § 232.405.

The revisions and addition read as follows:

§ 232.405 Interactive Data File submissions.

This section applies to electronic filers that submit Interactive Data Files. Section 229.601(b)(101) of this chapter (Item 601(b)(101) of Regulation S-K), General Instruction F of Form 11-K (§ 249.311 of this chapter); paragraph (101) of Part II—Information Not Required to be Delivered to Offerees or Purchasers of Form F-10 (§ 239.40 of this chapter), § 240.13a-21 of this chapter (Rule 13a-21 under the Exchange Act), paragraph 101 of the Instructions as to Exhibits of Form 20-F (§ 249.220f of this chapter), paragraph B.(15) of the General Instructions to Form 40-F (§ 249.240f of this chapter), paragraph C.(6) of the General Instructions to Form 6-

K (§ 249.306 of this chapter), § 240.17Ad-27(d) of this chapter (Rule 17Ad-27(d) under the Exchange Act), Note D.5 of § 240.14a-101 of this chapter (Rule 14a-101 under the Exchange Act), Item 1 of § 240.14c-101 of this chapter (Rule 14c-101 under the Exchange Act), General Instruction I of Form F-SR (§ 249.333 of this chapter), General Instruction C.3.(g) of Form N-1A (§§ 239.15A and 274.11A of this chapter), General Instruction I of Form N-2 (§§ 239.14 and 274.11a-1 of this chapter), General Instruction C.3.(h) of Form N-3 (§§ 239.17a and 274.11b of this chapter), General Instruction C.3.(h) of Form N-4 (§§ 239.17b and 274.11c of this chapter), General Instruction C.3.(h) of Form N-6 (§§ 239.17c and 274.11d of this chapter), General Instruction 2.(*l*) of § 274.12 of this chapter (Form N-8B-2), General Instruction 5 of § 239.16 of this chapter (Form S-6), General Instruction C.4 of Form N-CSR (§§ 249.331 and 274.128 of this chapter), and § 240.6b-1(c) of this chapter (Rule 6b-1(c) under the Exchange Act) specify when electronic filers are required or permitted to submit an Interactive Data File (§ 232.11), as further described in note 1 to this section. This section imposes content, format, and submission requirements for an Interactive Data File, but does not change the substantive content requirements for the financial and other disclosures in the Related Official Filing (§ 232.11).

(a) * * *

(2) Be submitted only by an electronic filer either required or permitted to submit an Interactive Data File as specified by Item 601(b)(101) of Regulation S-K, General Instruction F of Form 11-K (§ 249.311 of this chapter); paragraph (101) of Part II—Information Not Required to be Delivered to Offerees or Purchasers of Form F-10 (§ 239.40 of this chapter), § 240.13a-21 of this chapter (Rule 13a-21 under the Exchange Act), paragraph 101 of the Instructions as to Exhibits of Form 20-F (§ 249.220f of this chapter), paragraph B.(15) of the General Instructions to Form 40-F (§ 249.240f of this chapter), paragraph C.(6) of the General Instructions to Form 6-

K (§ 249.306 of this chapter), Rule 17Ad-27(d) under the Exchange Act, Note D.5 of Rule 14a-101 under the Exchange Act, Item 1 of Rule 14c-101 under the Exchange Act, General Instruction I to Form F-SR (§ 249.333 of this chapter), General Instruction C.3.(g) of Form N-1A (§§ 239.15A and 274.11A of this chapter), General Instruction I of Form N-2 (§§ 239.14 and 274.11a-1 of this chapter), General Instruction C.3.(h) of Form N-3 (§§ 239.17a and 274.11b of this chapter), General Instruction C.3.(h) of Form N-4 (§§ 239.17b and 274.11c of this chapter), General Instruction C.3.(h) of Form N-6 (§§ 239.17c and 274.11d of this chapter), General Instruction 2.(*l*) of § 274.12 of this chapter (Form N-8B-2), General Instruction 5 of § 239.16 of this chapter (Form S-6), General Instruction C.4 of Form N-CSR (§§ 249.331 and 274.128 of this chapter), or Rule 6b-1(c) under the Exchange Act (§ 240.6b-1(c) of this chapter), as applicable;

(3) * * *

(i) If the electronic filer is not a management investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a *et seq.*), a separate account as defined in section 2(a)(14) of the Securities Act (15 U.S.C. 77b(a)(14)) registered under the Investment Company Act of 1940, a business development company as defined in section 2(a)(48) of the Investment Company Act of 1940 (15 U.S.C. 80a-2(a)(48)), a unit investment trust as defined in Section 4(2) of the Investment Company Act of 1940 (15 U.S.C. 80a-4), a national securities exchange as defined in 17 CFR 242.600(b)(53) (Rule 600(b)(53) of Regulation NMS), or a clearing agency that provides a central matching service, and is not within one of the categories specified in paragraph (f)(1)(i) of this section, as partly embedded into a filing with the remainder simultaneously submitted as an exhibit to:

* * * * *

(ii) If the electronic filer is a management investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a *et seq.*), a separate account (as defined in section 2(a)(14) of the Securities Act (15 U.S.C. 77b(a)(14)) registered under the Investment Company Act of 1940, a business development company as defined in section 2(a)(48) of the Investment Company Act of 1940 (15 U.S.C. 80a-2(a)(48)), a unit investment trust as defined in Section 4(2) of the Investment Company Act of 1940 (15 U.S.C. 80a-4), a national securities exchange as defined in 17 CFR 242.600(b)(53) (Rule 600(b)(53) of Regulation NMS), or a clearing agency that provides a central matching service, and is not within one of the categories specified in paragraph (f)(1)(ii) of this section, as partly embedded into a filing with the remainder simultaneously submitted as an exhibit to a filing that contains the disclosure this section requires to be tagged; and

(4) Be submitted in accordance with the EDGAR Filer Manual and, as applicable, Item 601(b)(101) of Regulation S-K, General Instruction F of Form 11-K (§ 249.311 of this chapter), paragraph (101) of Part II—Information Not Required to be Delivered to Offerees or Purchasers of Form F-10 (§ 239.40 of this chapter), Rule 13a-21 under the Exchange Act, paragraph 101 of the Instructions as to Exhibits of Form 20-F (§ 249.220f of this chapter), paragraph B.(15) of the General Instructions to Form 40-F (§ 249.240f of this chapter), paragraph C.(6) of the General Instructions to Form 6-K (§ 249.306 of this chapter), Rule 17Ad-27(d) under the Exchange Act, Note D.5 of Rule 14a-101 under the Exchange Act, Item 1 of Rule 14c-101 under the Exchange Act, General Instruction I to Form F-SR (§ 249.333 of this chapter), General Instruction C.3.(g) of Form N-1A (§§ 239.15A and 274.11A of this chapter), General Instruction I of Form N-2 (§§ 239.14 and 274.11a-1 of this chapter), General Instruction C.3.(h) of Form N-3 (§§ 239.17a and 274.11b of this chapter), General Instruction C.3.(h) of Form N-4 (§§ 239.17b and 274.11c of

this chapter), General Instruction C.3.(h) of Form N-6 (§§ 239.17c and 274.11d of this chapter); Instruction 2.(*l*) of § 274.12 of this chapter (Form N-8B-2); General Instruction 5 of § 239.16 of this chapter (Form S-6); General Instruction C.4 of Form N-CSR (§§ 249.331 and 274.128 of this chapter), or Rule 6b-1(c) under the Exchange Act (§ 240.6b-1(c) of this chapter).

(b) * * *

(1) If the electronic filer is not a management investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a et seq.), a separate account (as defined in section 2(a)(14) of the Securities Act (15 U.S.C. 77b(a)(14)) registered under the Investment Company Act of 1940, a business development company as defined in section 2(a)(48) of the Investment Company Act of 1940 (15 U.S.C. 80a-2(a)(48)), a unit investment trust as defined in Section 4(2) of the Investment Company Act of 1940 (15 U.S.C. 80a-4), a clearing agency that provides a central matching service, or a national securities exchange as defined in 17 CFR 242.600(b)(53) (Rule 600(b)(53) of Regulation NMS), an Interactive Data File must consist of only a complete set of information for all periods required to be presented in the corresponding data in the Related Official Filing, as applicable, no more and no less, from all of the following categories:

* * * * *

(6) If the electronic filer is a national securities exchange as defined in 17 CFR 242.600(b)(53) (Rule 600(b)(53) of Regulation NMS), an Interactive Data File must consist of the disclosure provided pursuant to § 240.6b-1(c) of this chapter (Rule 6b-1(c) under the Exchange Act).

* * * * *

Note 1 to § 232.405:

Item 601(b)(101) of Regulation S-K specifies the circumstances under which an Interactive Data File must be submitted and the circumstances under which it is permitted to be submitted, with respect to §§ 239.11 (Form S-1), 239.13 (Form S-3), 239.25 (Form S-4), 239.18 (Form S-11), 239.31 (Form F-1), 239.33 (Form F-3), 239.34 (Form F-4), 249.310 (Form 10-K), 249.308a (Form 10-Q), and 249.308 (Form 8-K) of this chapter. General Instruction F of Form 11-K (§ 249.311 of this chapter) specifies the circumstances under which an Interactive Data File must be submitted, and the circumstances under which it is permitted to be submitted, with respect to Form 11-K. Paragraph (101) of Part II—Information not Required to be Delivered to Offerees or Purchasers of Form F-10 (§ 239.40 of this chapter) specifies the circumstances under which an Interactive Data File must be submitted and the circumstances under which it is permitted to be submitted, with respect to Form F-10. Paragraph 101 of the Instructions as to Exhibits of Form 20-F (§ 249.220f of this chapter) specifies the circumstances under which an Interactive Data File must be submitted and the circumstances under which it is permitted to be submitted, with respect to Form 20-F. Paragraph B.(15) of the General Instructions to Form 40-F (§ 249.240f of this chapter) and Paragraph C.(6) of the General Instructions to Form 6-K (§ 249.306 of this chapter) specify the circumstances under which an Interactive Data File must be submitted and the circumstances under which it is permitted to be submitted, with respect to §§ 249.240f (Form 40-F) and 249.306 of this chapter (Form 6-K). Rule 17Ad-27(d) under the Exchange Act specifies the circumstances under which an Interactive Data File must be submitted with respect the reports required under Rule 17Ad-27. Note D.5 of § 240.14a-101 of this chapter (Schedule 14A) and Item 1 of § 240.14c-101 of this chapter (Schedule 14C) specify the circumstances under which an Interactive Data File must be submitted with respect to

Schedules 14A and 14C. Rule 13a-21 under the Exchange Act and General Instruction I to Form F-SR (§ 249.333 of this chapter) specify the circumstances under which an Interactive Data File must be submitted, with respect to Form F-SR. Item 601(b)(101) of Regulation S-K, paragraph (101) of Part II—Information not Required to be Delivered to Offerees or Purchasers of Form F-10, paragraph 101 of the Instructions as to Exhibits of Form 20-F, paragraph B.(15) of the General Instructions to Form 40-F, and paragraph C.(6) of the General Instructions to Form 6-K all prohibit submission of an Interactive Data File by an issuer that prepares its financial statements in accordance with §§ 210.6-01 through 210.6-10 of this chapter (Article 6 of Regulation S-X). For an issuer that is a management investment company or separate account registered under the Investment Company Act of 1940 (15 U.S.C. 80a *et seq.*) or a business development company as defined in section 2(a)(48) of the Investment Company Act of 1940 (15 U.S.C. 80a-2(a)(48)), or a unit investment trust as defined in Section 4(2) of the Investment Company Act of 1940 (15 U.S.C. 80a-4), General Instruction C.3.(g) of Form N-1A (§§ 239.15A and 274.11A of this chapter), General Instruction I of Form N-2 (§§ 239.14 and 274.11a-1 of this chapter), General Instruction C.3.(h) of Form N-3 (§§ 239.17a and 274.11b of this chapter), General Instruction C.3.(h) of Form N-4 (§§ 239.17b and 274.11c of this chapter), General Instruction C.3.(h) of Form N-6 (§§ 239.17c and 274.11d of this chapter), General Instruction 2.(*l*) of Form N-8B-2 (§ 274.12 of this chapter), General Instruction 5 of Form S-6 (§ 239.16 of this chapter), and General Instruction C.4 of Form N-CSR (§§ 249.331 and 274.128 of this chapter), as applicable, specifies the circumstances under which an Interactive Data File must be submitted. For national securities exchanges as defined in 17 CFR 242.600(b)(53) (Rule 600(b)(53) of Regulation NMS), Rule 6b-1(c) under the Exchange Act (§ 240.6b-1(c) of this chapter) specifies the circumstances under which an Interactive Data File must be submitted.

PART 240 – GENERAL RULES AND REGULATIONS, SECURITIES EXCHANGE ACT OF 1934

4. The general authority citation for part 240 continues to read as follows:

Authority: 15 U.S.C. 77c, 77d, 77g, 77j, 77s, 77z-2, 77z-3, 77eee, 77ggg, 77nnn, 77sss, 77ttt, 78c, 78c-3, 78c-5, 78d, 78e, 78f, 78g, 78i, 78j, 78j-1, 78j-4, 78k, 78k-1, 78*l*, 78m, 78n, 78n-1, 78*o*, 78*o*-4, 78*o*-10, 78p, 78q, 78q-1, 78s, 78u-5, 78w, 78x, 78dd, 78*ll*, 78mm, 80a-20, 80a-23, 80a-29, 80a-37, 80b-3, 80b-4, 80b-11, 7201 *et seq*., and 8302; 7 U.S.C. 2(c)(2)(E); 12 U.S.C. 5221(e)(3); 18 U.S.C. 1350; and Pub. L. 111-203, 939A, 124 Stat. 1376 (2010); and Pub. L. 112-106, sec. 503 and 602, 126 Stat. 326 (2012), unless otherwise noted.

* * * * *

5. Add § 240.6b-1 to read as follows:

§ 240.6b-1 Volume-Based Exchange Transaction Pricing for NMS Stocks.

(a) A national securities exchange shall not offer volume-based transaction fees, rebates, or other incentives in connection with the execution of agency or riskless principal orders in NMS stocks, as defined in 17 CFR 242.600(b)(55) (Rule 600(b)(55) of Regulation NMS). For purposes of this section, the term *riskless principal* means a transaction in which, after having received an order to buy from a customer, the broker or dealer purchased the security from another person to offset a contemporaneous sale to such customer or, after having received an order to sell from a customer, the broker or dealer sold the security to another person to offset a contemporaneous purchase from such customer.

(b) A national securities exchange that offers volume-based transaction fees, rebates, or other incentives in connection with the execution of proprietary orders in NMS stocks for the account of a member shall:

(1) Have rules to require members to engage in practices that facilitate the exchange's ability to comply with the prohibition in paragraph (a) of this section; and

(2) Establish, maintain, and enforce written policies and procedures reasonably designed to detect and deter members from receiving volume-based transaction pricing in connection with the execution of agency or riskless principal orders in NMS stocks.

(c) A national securities exchange that offers volume-based transaction fees, rebates, or other incentives in connection with the execution of proprietary orders in NMS stocks for the account of a member shall submit electronically to the Commission the following information each calendar month within five calendar days after the end of the month, which will be made publicly available:

(1) The number of members that executed proprietary orders in NMS stocks for the member's account on the exchange during the month; and

(2) For each volume-based transaction fee, rebate, and other incentive, a summary table that includes the following information:

(i) A label to identify the base fee or rebate;

(ii) A label to identify each pricing tier that corresponds to the label used in the exchange's pricing schedule;

(iii) The amount of the fee, rebate, or other incentive identified;

(iv) An explanation of the tier requirements; and

(v) The total number of members that qualified for the base fee, base rebate, or each tier during the month.

(3) The disclosures required under this paragraph (c) shall be provided in an Interactive Data File in accordance with 17 CFR 232.405 (Rule 405 of Regulation S-T).

By the Commission.

Dated: October 18, 2023.

J. Matthew DeLesDernier,

Deputy Secretary.