conjunction with the other SROs, consider and develop rules and procedures that would allow for the periodic testing of the performance of the MWCB mechanism. In addition, as noted above, the extension will permit the exchanges to consider enhancements to the MWCB processes such as modifications to the Level 3 process. Further, the Exchange understands that FINRA and other national securities exchanges will file proposals to extend their rules regarding the market-wide circuit breaker pilot. Thus, the proposed rule change will help to ensure consistency across market centers without implicating any competitive issues.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No comments were solicited or received on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the foregoing proposed rule change does not: (1) Significantly affect the protection of investors or the public interest; (2) impose any significant burden on competition; and (3) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act [10] and Rule 19b–4(f)(6) [11] thereunder.

A proposed rule change filed under Rule 19b–4(f)(6) [12] normally does not become operative for 30 days after the date of filing. However, pursuant to Rule 19b–4(f)(6)(iii),[13] the Commission may designate a shorter time if such action is consistent with the protection of investors and the public interest. The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative upon filing. Extending the pilot for an additional year will allow the uninterrupted operation of the existing pilot to halt trading across the U.S. markets. Therefore, the Commission believes that waiving the 30-day operative delay is consistent with the protection of investors and the public interest. The Commission hereby designates the proposed rule change to be operative upon filing.[14]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

• Use the Commission's internet comment form (*http://www.sec.gov/rules/sro.shtml*); or

• Send an email to *rule-comments@sec.gov.* Please include File Number SR–CboeBYX–2019–017 on the subject line.

Paper Comments

• Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549–1090.

All submissions should refer to File Number SR–CboeBYX–2019–017. 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. The Commission will post all comments on the Commission's internet website (*http://www.sec.gov/rules/sro.shtml*).

Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be 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 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly.

All submissions should refer to File Number SR–CboeBYX–2019–017 and should be submittedon or before November 14, 2019.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[15]

Eduardo A. Aleman,

Deputy Secretary.

[FR Doc. 2019–23174 Filed 10–23–19; 8:45 am]

BILLING CODE 8011–01–P

[10] 15 U.S.C. 78s(b)(3)(A).

[11] 17 CFR 240.19b–4(f)(6).

[12] *Id.*

[13] 17 CFR 240.19b–4(f)(6)(iii).

[14] For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

[15] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–87350; File No. SR–NYSEArca–2019–63]

Self-Regulatory Organizations; NYSE Arca, Inc.; Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment No. 1, To Make Permanent the Retail Liquidity Program Pilot, Rule 7.44–E, Which Is Set To Expire on October 31, 2019, Notice of Filing of Amendment No. 1, and Order Granting Limited Exemption Pursuant to Rule 612(c) of Regulation NMS

October 18, 2019.

I. Introduction

On September 4, 2019, NYSE Arca, Inc. (the ''Exchange'' or ''NYSE Arca'') filed with the Securities and Exchange Commission (''Commission''), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Exchange Act'') [1] and Rule 19b–4 thereunder,[2] a proposed rule change to make permanent Exchange Rule 7.44–E governing the Exchange's Retail Liquidity Program Pilot (''Program''). The proposed rule change was published for comment in the **Federal Register** on September 10, 2019.[3] The Commission received one comment letter on the proposed rule change.[4] On October 11, 2019, the Exchange filed Amendment No. 1 to the proposed rule change, which supersedes and replaces

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 86870 (September 10, 2019), 84 FR 47575 (''Notice'').

[4] *See* Letter from Bahram Kasmai, dated September 4, 2019 (stating ''Thank you very much. I would incresing [sic] my information about Exchange.'').

the original filing in its entirety.[5] In connection with the proposed rule change, the Exchange requests exemptive relief from Rule 612 of Regulation NMS,[6] which, among other things, prohibits a national securities exchange from accepting or ranking orders priced greater than $1.00 per share in an increment smaller than $0.01.[7] The Commission is publishing this notice to solicit comments on Amendment No. 1 from interested persons, issuing this order approving the proposed rule change, as modified by Amendment No. 1, on an accelerated basis, and issuing this order granting to the Exchange a limited exemptive relief pursuant to Rule 612(c) of Regulation NMS.

II. Description of the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of those statements may be examined at the places specified in Item V below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant parts of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to make permanent Rule 7.44–E, which sets forth the Exchange's pilot Retail Liquidity Program (the ''Program''). In support of the proposal to make the pilot Program permanent, the Exchange believes it is appropriate to provide background on the Program and an analysis of the economic benefits for retail investors and the marketplace flowing from operation of the Program.

Background

In December 2013, the Commission approved the Program on a pilot basis.[8] The purpose of the pilot was to analyze data and assess the impact of the Program on the marketplace. The pilot period was originally scheduled to end on April 14, 2015. The Exchange filed to extend the operation of the pilot on several occasions in order to prepare this rule filing. The pilot is currently set to expire on October 31, 2019.[9]

The Exchange established the Program to attract retail order flow to the Exchange, and allow such order flow to receive potential price improvement.[10] The Program is currently limited to trades occurring at prices equal to or greater than $1.00 a share. The Program includes NYSE Arca-listed securities and securities traded pursuant to unlisted trading privileges (''UTP''), but excluding NYSE-listed (Tape A) securities.

As described in greater detail below, under Rule 7.44–E, a new class of market participant called Retail Liquidity Providers (''RLPs'') [11] and non-RLP Equity Trading Permit (''ETP'') Holders [12] are able to provide potential price improvement to retail investor orders in the form of a non-displayed order that is priced better than the best protected bid or offer (''PBBO''), called a Retail Price Improvement Order (''RPI''). When there is an RPI in a particular security, the Exchange disseminates an indicator, known as the Retail Liquidity Identifier (''RLI''), that such interest exists. Retail Member Organizations (''RMOs'') can submit a Retail Order to the Exchange, which interacts, to the extent possible, with available contra-side RPI and then may interact with other liquidity on the Exchange or elsewhere, depending on the Retail Order's instructions. The segmentation in the Program allows retail order flow to receive potential price improvement as a result of their order flow being deemed more desirable by liquidity providers.[13]

In approving the pilot, the Commission concluded that the Program was reasonably designed to benefit retail investors by providing price improvement opportunities to retail order flow. Further, while the Commission noted that the Program would treat retail order flow differently from order flow submitted by other market participants, such segmentation would not be inconsistent with Section 6(b)(5) of the Act,[14] which requires that the rules of an exchange are not designed to permit unfair discrimination. As the Commission recognized, retail order segmentation was designed to create additional competition for retail order flow, leading to additional retail order flow to the exchange environment and ensuring that retail investors benefit from the

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[5] *See infra* Section V.

[6] 17 CFR 242.612(c).

[7] *See* Letter from Martha Redding, Associate General Counsel and Assistant Secretary, New York Stock Exchange, dated September 12, 2019.

[8] *See* Securities Exchange Act Release No. 71176 (December 23, 2013), 78 FR 79524 (December 30, 2013) (SR–NYSEArca–2013–107) (''RLP Approval Order''). In addition to approving the Program on a pilot basis, the Commission granted the Exchange's request for exemptive relief from Rule 612 of Regulation NMS, 17 CFR 242.612 (''Sub-Penny Rule''), which among other things prohibits a national securities exchange from accepting or ranking orders priced greater than $1.00 per share in an increment smaller than $0.01. *See id.*

In 2013, the Program's rules were set forth in NYSE Arca Equities Rule 7.44. In connection with the Exchange's implantation of Pillar, an integrated trading technology platform designed to use a single specification for connecting to the equities and options markets operated by NYSE Arca and its affiliates, New York Stock Exchange LLC and NYSE American LLC, NYSE Arca Equities Rule 7.44 was replaced by NYSE Arca Equities Rule 7.44P. *See* Securities Exchange Act Release No. 76267 (October 26, 2015), 80 FR 66951 (October 30, 2015) (SR–NYSEArca–2015–56) (order approving equity trading rules relating to the implementation of Pillar, including, among others, NYSE Arca Equities Rule 7.44P); Securities Exchange Act Release No. 79078 (October 11, 2016), 81 FR 71559 (October 17, 2016) (SR–NYSEArca–2015–135) (deleting obsolete rules following migration to Pillar, including NYSE Arca Equities 7.44, and removing ''P'' modifier in NYSE Arca Equities Rule 7.44P). At the time, NYSE Arca Equities was a wholly owned subsidiary of the Exchange. In 2017, NYSE Arca Equities was merged with and into the Exchange and the NYSE Arca Equities rules were integrated into the NYSE Arca rules in order to create a single rulebook. The Program's rules were accordingly relocated to NYSE Arca Rule 7.44–E. *See* Securities Exchange Act Release No. 81419 (August 17, 2017), 82 FR 40044 (August 23, 2017) (SR–NYSEArca–2017–40) (Approval Order).

[9] *See* Securities Exchange Act Release No. 87153 (September 30, 2019), 84 FR 53188 (October 4, 2019) (SR–NYSEArca–2019–67) (extending pilot to October 31, 2019). *See also* Securities Exchange Act Release No. 86198 (June 26, 2019), 84 FR 31648 (July 2, 2019) (SR–NYSEArca–2019–45) (extending pilot to September 30, 2019); Securities Exchange Act Release No. 84773 (December 10, 2018), 83 FR 64419 (December 14, 2018) (SR–NYSEArca–2018–89) (extending pilot to June 30, 2019); Securities Exchange Act Release No. 83538 (June 28, 2018), 83 FR 31210 (July 3, 2018) (SR–NYSEArca–2018–46) (extending pilot to December 31, 2018); Securities Exchange Act Release No. 82289 (December 11, 2017), 82 FR 59677 (December 15, 2017) (SR–NYSEArca–2017–137) (extending pilot to June 30, 2018); Securities Exchange Act Release No. 80851 (June 2, 2017), 82 FR 26722 (June 8, 2017) (SR–NYSEArca–2017–63) (extending pilot to December 31, 2017); Securities Exchange Act Release No. 79495 (December 7, 2016), 81 FR 90033 (December 13, 2016) (SR–NYSEArca–2016–157) (extending pilot to June 30, 2017); Securities Exchange Act Release No. 78601 (August 17, 2016), 81 FR 57632 (August 23, 2016) (SR–NYSEArca–2016–113) (extending pilot to December 31, 2016) *as corrected by* Securities Exchange Act Release No. 78601 (August 17, 2016), 81 FR 63243 (September 14, 2016) (SR–NYSEArca–2016–113); Securities Exchange Act Release No. 77424 (March 23, 2016), 81 FR 17523 (March 29, 2016) (SR–NYSEArca–2016–47) (extending pilot to August 31, 2016); Securities Exchange Act Release No. 75994 (September 28, 2015), 80 FR 59834 (October 2, 2015) (SR–NYSEArca–2015–84) (extending pilot to March 31, 2016); and Securities Exchange Act Release No. 74572 (March 24, 2015), 80 FR 16705 (March 30, 2015) (SR–NYSEArca–2015–22) (extending pilot to September 30, 2015).

[10] RLP Approval Order, 78 FR at 79525.

[11] The Program also allows for RLPs to register with the Exchange. However, any firm can enter RPI orders into the system. Currently, no ETP Holders are registered as an RLP.

[12] NYSE Arca refers to its members as ETP Holders. *See* RLP Approval Order, 78 FR at 79525, n.9.

[13] RLP Approval Order, 78 FR at 79528.

[14] 15 U.S.C. 78f(b)(5).

better price that liquidity providers are willing to give their orders.[15]

As discussed below, the Exchange believes that the Program data supports these conclusions and that it is therefore appropriate to make the pilot Program permanent.[16] The Exchange notes that the Commission recently approved on a permanent basis the substantially similar retail liquidity programs operated on a pilot basis by New York Stock Exchange LLC (''NYSE'') and Nasdaq BX, Inc. (''Nasdaq BX'').[17] The Commission also recently approved a third exchange's retail liquidity program that had not been previously approved on a pilot basis.[18]

Description of Pilot Rule 7.44–E That Would Become Permanent

Definitions

Rule 7.44–E(a) contains the following definitions:

• First, the term ''Retail Liquidity Provider'' (''RLP'') is defined as a ETP Holder that is approved by the Exchange under the Rule to act as such and to submit Retail Price Improvement Orders in accordance with the Rule.[19]

• Second, the term ''Retail Member Organization'' (''RMO'') is defined as an ETP Holder that has been approved by the Exchange to submit Retail Orders.[20]

• Third, the term ''Retail Order'' means an agency order or a riskless principal order meeting the criteria of FINRA Rule 5320.03 that originates from a natural person and is submitted to the Exchange by an RMO, provided that no change is made to the terms of the order with respect to price or side of market and the order does not originate from a trading algorithm or any other computerized methodology. A Retail Order may be an odd lot, round lot, or mixed lot.[21]

• Finally, the term ''Retail Price Improvement Order'' means non-displayed interest in NYSE Arca-listed securities and UTP Securities, excluding NYSE-listed (Tape A) securities, that would trade at prices better than the best protected bid (''PBB'') or best protected offer (''PBO'') by at least $0.001 and that is identified as a Retail Price Improvement Order in a manner prescribed by the Exchange.[22] The price of an RPI would be determined by an ETP Holder's entry of RPI buy or sell interest into Exchange systems. RPIs would remain undisplayed. An RPI that was not priced within the PBBO would be rejected upon entry. A previously entered RPI that became priced at or inferior to the PBBO would not be eligible to interact with incoming Retail Orders, and such an RPI would cancel if a Retail Order executed against all displayed interest ranked ahead of the RPI and then attempted to execute against the RPI. If not cancelled, an RPI that was no longer priced at or inferior to the PBBO would again be eligible to interact with incoming Retail Orders. An RPI must be designated as either a PL or MPL Order, and an order so designated would interact with only Retail Orders.

RLPs and other liquidity providers[23] and RMOs could enter odd lots, round lots or mixed lots as RPIs and as Retail Orders, respectively. As discussed below, RPIs would be ranked and allocated according to price and time of entry into Exchange systems and therefore without regard to whether the size entered was an odd lot, round lot or mixed lot. Similarly, Retail Orders would interact with RPIs according to the priority and allocation rules of the Program and without regard to whether they were odd lots, round lots or mixed lots. Finally, Retail Orders could be designated as Type 1 or Type 2 without regard to the size of the lot. RPIs would interact with Retail Orders as follows; a more detailed priority and order allocation discussion is below. An RPI would interact with Retail Orders at the level at which the RPI was priced as long as the minimum required price improvement was produced. Accordingly, if RPI sell interest was entered with a $10.098 offer while the PBO was $10.11, the RPI could interact with the Retail Order at $10.098, producing $0.012 of price improvement.

RMO Qualifications and Application Process

Under Rule 7.44–E(b), any ETP Holder[24] can qualify as an RMO if it conducts a retail business or routes[25] retail orders on behalf of another broker-dealer. For purposes of Rule 7.44–E(b), conducting a retail business includes carrying retail customer accounts on a fully disclosed basis. To become an RMO, an ETP Holder must submit: (1) An application form; (2) supporting documentation sufficient to demonstrate the retail nature and characteristics of the applicant's order flow;[26] and (3) an

[15] RLP Approval Order, 78 FR at 79528.

[16] *See* note 8, *supra.* Rule 7.44–E has been amended several additional times. *See* Securities Exchange Act Release No. 71780 (March 24, 2014), 79 FR 17623 (March 28, 2014) (SR–NYSEArca–2014–21) (amending rule to provide that odd-lot interest priced between the PBBO will trade together with other undisplayed interest according to price-time priority); Securities Exchange Act Release No. 73329 (October 9, 2014), 79 FR 62227 (October 16, 2014) (SR–NYSEArca–2014–115) (amending rule to provide that RPI that are not priced better than the PBB or PBBO will not be rejected upon entry); Securities Exchange Act Release No. 73529 (November 5, 2014), 79 FR 67210 (November 12, 2014) (SR–NYSEArca–2014–128) (amending rule to delete reference to proprietary data feed in Rule 7.44E(j)); Securities Exchange Act Release No. 76549 (December 3, 2015), 80 FR 76595 (December 9, 2015) (SR–NYSEArca–2015–115) (''Release No. 76549'') (amending rule to distinguish between orders routed on behalf of other broker-dealers and orders routed on behalf of introduced retail accounts that are carried on a fully disclosed basis); Securities Exchange Act Release No. 77236 (February 25, 2016), 81 FR 10943 (March 2, 2016) (SR–NYSEArca–2016–30) (amending rule to clarify that Retail Orders may not be designated with a minimum trade size).

[17] *See* Securities Exchange Act Release No. 85160 (February 15, 2019), 84 FR 5754 (February 22, 2019) (SR–NYSE–2018–28) (''Release No. 85160'') (approving the New York Stock Exchange's Retail Liquidity Program on a permanent basis and granting a limited exemption to the Sub-Penny Rule); Securities Exchange Act Release No. 86194 (June 25, 2019), 84 FR 31385 (July 1, 2019) (SR–NYSEArca–2019–11) (approving Nasdaq BX's Retail Price Improvement Program on a permanent basis and granting a limited exemption to the Sub-Penny Rule).

[18] *See* Securities Exchange Act Release No. 86619 (August 9, 2019), 84 FR 41769 (August 15, 2019) (SR–IEX–2019–05).

[19] *See* Rule 7.44–E(a)(1).

[20] *Id.* at (a)(2).

[21] *Id.* at (a)(3).

[22] *Id.* at (a)(4). An RPI remains non-displayed in its entirety, is ranked Priority 3—Non-Display Orders. *See id.* at (a)(4)(A). Exchange systems will monitor whether RPI buy or sell interest is eligible to trade with incoming Retail Orders. An RPI to buy (sell) with a limit price at or below (above) the PBB (PBO) or at or above (below) the PBO (PBB) will not be eligible to trade with incoming Retail Orders to sell (buy), and such an RPI will cancel if a Retail Order to sell (buy) trades with all displayed liquidity at the PBB (PBO) and then attempts to trade with the RPI. If not cancelled, an RPI to buy (sell) with a limit price that is no longer at or below (above) the PBB (PBO) or at or above (below) the PBO (PBB) will again be eligible to trade with incoming Retail Orders. *See id.* at (a)(4)(B). For securities to which it is assigned, an RLP may only enter an RPI in its RLP capacity. An RLP is permitted, but not required, to submit RPIs for securities to which it is not assigned, and will be treated as a non-RLP ETP Holder for those particular securities. Additionally, ETP Holders other than RLPs are permitted, but not required, to submit RPIs. *See id.* at (a)(4)(C). Finally, an RPI may be an odd lot, round lot, or mixed lot. An RPI must be designated as either a Limit Non-Displayed Order or MPL Order, and an order so designated will interact with incoming Retail Orders only and will not interact with either a Type 2-Retail Order Day or Type 2-Retail Order Market that is resting on the NYSE Arca Book. *See id.* at (a)(4)(D).

[23] A Market Maker (''MM'') or Lead Market Maker (''LMM'') would be permitted to enter RPIs for securities in which they were not registered as an MM or LMM; however, the MM or LMM would not be eligible for execution fees that are lower than non-RLP rates for such securities.

[24] An RLP may also act as an RMO for securities to which it is not assigned, subject to the qualification and approval process established by the proposed rule.

[25] *See* Release No. 76549, 80 FR at 76595.

[26] The supporting documentation may include sample marketing literature, website screenshots, other publicly disclosed materials describing the member organization's retail order flow, and any other documentation and information requested by the Exchange in order to confirm that the applicant's order flow would meet the requirements of the Retail Order definition. *See* Rule 7.44–E(b)(2)(B).

attestation, in a form prescribed by the Exchange, that any order submitted by the member organization as a Retail Order would meet the qualifications for such orders under Rule 7.44–E.[27]

An RMO must have written policies and procedures reasonably designed to assure that it will only designate orders as Retail Orders if all requirements of a Retail Order are met. Such written policies and procedures must require the ETP Holder to (i) exercise due diligence before entering a Retail Order to assure that entry as a Retail Order is in compliance with the requirements of Rule 7.44–E, and (ii) monitor whether orders entered as Retail Orders meet the applicable requirements. If the RMO represents Retail Orders from another broker-dealer customer, the RMO's supervisory procedures must be reasonably designed to assure that the orders it receives from such broker-dealer customer that it designates as Retail Orders meet the definition of a Retail Order. The RMO must (i) obtain an annual written representation, in a form acceptable to the Exchange, from each broker-dealer customer that sends it orders to be designated as Retail Orders that entry of such orders as Retail Orders will be in compliance with the requirements of this rule, and (ii) monitor whether its broker-dealer customer's Retail Order flow continues to meet the applicable requirements.[28]

Following submission of the required materials, the Exchange provides written notice of its decision to the member organization.[29] A disapproved applicant can appeal the disapproval by the Exchange as provided in Rule 7.44–E(i), and/or reapply for RMO status 90 days after the disapproval notice is issued by the Exchange. An RMO can also voluntarily withdraw from such status at any time by giving written notice to the Exchange.[30]

RLP Qualifications

To qualify as an RLP under Rule 7.44–E(c), an ETP Holder must: (1) Already be registered as a MM or LMM; (2) demonstrate an ability to meet the requirements of an RLP; (3) have the ability to accommodate Exchange-supplied designations that identify to the Exchange RLP trading activity in assigned RLP securities; and (4) have adequate trading infrastructure and technology to support electronic trading.[31]

RLP Application

Under Rule 7.44–E(d), to become an RLP, an ETP Holder must submit an RLP application form with all supporting documentation to the Exchange. The Exchange would determine whether an applicant was qualified to become an RLP as set forth above.[32] After an applicant submitted an RLP application to the Exchange with supporting documentation, the Exchange would notify the applicant ETP Holder of its decision. The Exchange could approve one or more ETP Holders to act as an RLP for a particular security. The Exchange could also approve a particular ETP Holder to act as an RLP for one or more securities. Approved RLPs would be assigned securities according to requests made to, and approved by, the Exchange.[33]

If an applicant was approved by the Exchange to act as an RLP, the applicant would be required to establish connectivity with relevant Exchange systems before the applicant would be permitted to trade as an RLP on the Exchange.[34] If the Exchange disapproves the application, the Exchange would provide a written notice to the ETP Holder. The disapproved applicant could appeal the disapproval by the Exchange as provided in Rule 7.44–E(i) and/or reapply for RLP status 90 days after the disapproval notice was issued by the Exchange.[35]

Voluntary Withdrawal of RLP Status

An RLP would be permitted to withdraw its status as an RLP by giving notice to the Exchange under Rule 7.44–E(e). The withdrawal would become effective when those securities assigned to the withdrawing RLP were reassigned to another RLP. After the Exchange received the notice of withdrawal from the withdrawing RLP, the Exchange would reassign such securities as soon as practicable, but no later than 30 days after the date the notice was received by the Exchange. If the reassignment of securities took longer than the 30-day period, the withdrawing RLP would have no further obligations and would not be held responsible for any matters concerning its previously assigned RLP securities.[36]

RLP Requirements

Under Rule 7.44–E(f), an RLP would only be permitted to enter RPIs electronically and directly into Exchange systems and facilities designated for this purpose and could only submit RPIs in their role as an RLP for the securities to which it is assigned as RLP. An RLP entering Retail Price Improvement Orders in securities to which it is not assigned is not required to satisfy these requirements.[37] In order to be eligible for execution fees that are lower than non-RLP rates, an RLP would be required to maintain (1) an RPI that was better than the PBB at least five percent of the trading day for each assigned security; and (2) an RPI that was better than the PBO at least five percent of the trading day for each assigned security.[38]

An RLP's five-percent requirements would be calculated by determining the average percentage of time the RLP maintained an RPI in each of its RLP securities during the regular trading day, on a daily and monthly basis.[39] The Exchange would determine whether an RLP met this requirement by calculating the following:

- The ''Daily Bid Percentage,'' calculated by determining the percentage of time an RLP maintains a Retail Price Improvement Order with respect to the PBB during each trading day for a calendar month;
- The ''Daily Offer Percentage,'' calculated by determining the percentage of time an RLP maintains a Retail Price Improvement Order with respect to the PBO during each trading day for a calendar month;
- The ''Monthly Average Bid Percentage,'' calculated for each RLP security by summing the security's ''Daily Bid Percentages'' for each trading day in a calendar month then dividing the resulting sum by the total number of trading days in such calendar month; and
- The ''Monthly Average Offer Percentage,'' calculated for each RLP security by summing the security's ''Daily Offer Percentage'' for each trading day in a calendar month and

[27] *See id.* at (b)(2)(A)–(C).

[28] *Id.* at (b)(6).

[29] *Id.* at (b)(3).

[30] *Id.* at (b)(5).

[31] *Id.* at (c)(1)–(4). Because an RLP would only be permitted to trade electronically, an ETP Holder's technology must be fully automated to accommodate the Exchange's trading and reporting systems that are relevant to operating as an RLP. If an ETP Holder was unable to support the relevant electronic trading and reporting systems of the Exchange for RLP trading activity, it would not qualify as an RLP. An RLP may not use the Exchange supplied designations for non-RLP trading activity at the Exchange. Additionally, an ETP Holder will not receive credit for its RLP trading activity for which it does not use its designation.

[32] *Id.* at (d)(1).

[33] *Id.* at (d)(2).

[34] *Id.* at (d)(3).

[35] *Id.* at (d)(4).

[36] *See id.* at (e).

[37] *Id.* at (f)(1).

[38] An ETP Holder acting as an RLP for a security entering RPIs into Exchange systems and facilities for securities to which it was not assigned would not be eligible for execution fees that are lower than non-RLP rates for securities to which it was not assigned.

[39] *Id.* at (f)(2).

then dividing the resulting sum by the total number of trading days in such calendar month.

Finally, only RPIs would be used when calculating whether an RLP is in compliance with its five-percent requirements.[40]

The five-percent requirement is not applicable in the first two calendar months a member organization operates as an RLP and takes effect on the first day of the third consecutive calendar month the member organization operates as an RLP.[41]

Failure of RLP To Meet Requirements

Rule 7.44–E(g) addresses the consequences of an RLP's failure to meet its requirements. If, after the first two months an RLP acted as an RLP, an RLP fails to meet any of the requirements set forth in Rule 7.44–E(f) for an assigned RLP security for three consecutive months, the Exchange could, in its discretion, take one or more of the following actions:

- Revoke the assignment of any or all of the affected securities from the RLP;
- revoke the assignment of unaffected securities from the RLP; or
- disqualify the member organization from its status as an RLP.[42]

The Exchange will determine if and when an ETP Holder is disqualified from its status as an RLP. One calendar month prior to any such determination, the Exchange notifies an RLP of such impending disqualification in writing. When disqualification determinations are made, the Exchange provides a written disqualification notice to the member organization.[43] A disqualified RLP could appeal the disqualification as provided in proposed Rule 7.44–E(i) and/or reapply for RLP status 90 days after the disqualification notice is issued by the Exchange.[44]

Failure of RMO To Abide by Retail Order Requirements

Rule 7.44–E(h) addresses an RMO's failure to abide by Retail Order requirements. If an RMO designates orders submitted to the Exchange as Retail Orders and the Exchange determines, in its sole discretion, that those orders fail to meet any of the requirements of Retail Orders, the Exchange may disqualify a member organization from its status as an RMO.[45] When disqualification determinations are made, the Exchange will provide a written disqualification notice to the ETP Holder.[46] A disqualified RMO could appeal the disqualification as provided in proposed Rule 7.44–E(i) and/or reapply for RMO status 90 days after the disqualification notice is issued by the Exchange.[47]

Appeal of Disapproval or Disqualification

Rule 7.44–E(i) describes the appeal rights of ETP Holders. An ETP Holder that disputes the Exchange's decision to disapprove it under Rule 7.44–E(b) or (d) or disqualify it under Rule 7.44–E(g) or (h) may request, within five business days after notice of the decision is issued by the Exchange, that a Retail Liquidity Program Panel (''RLP Panel'') review the decision to determine if it was correct.[48] The RLP Panel would consist of the Chief Regulatory Officer (''CRO''), or a designee of the CRO, and qualified Exchange employees.[49] The RLP Panel will review the facts and render a decision within the time frame prescribed by the Exchange.[50] The RLP Panel may overturn or modify an action taken by the Exchange under the Rule. A determination by the RLP Panel would constitute final action by the Exchange on the matter at issue.[51]

Retail Liquidity Identifier

Under Rule 7.44–E(j), the Exchange disseminates an identifier through the Consolidated Quotation System or the UTP Quote Data Feed, as applicable, when RPI interest priced at least $0.001 better than the PBB or PBO for a particular security is available in Exchange systems (''Retail Liquidity Identifier''). The Retail Liquidity Identifier shall reflect the symbol for the particular security and the side (buy or sell) of the RPI interest, but shall not include the price or size of the RPI interest.[52]

Retail Order Designations

Under Rule 7.44–E(k), a Retail Order may not be designated with a ''No Midpoint Execution'' Modifier or with a minimum trade size. Under subsection (k), an RMO can designate how a Retail Order would interact with available contra-side interest as follows:

- A Type 1-Retail Order to buy (sell) is a Limit IOC Order that will trade only with available Retail Price Improvement Orders to sell (buy) and all other orders to sell (buy) with a working price below (above) the PBO (PBB) on the NYSE Arca Book and will not route. The quantity of a Type 1-Retail Order to buy (sell) that does not trade with eligible orders to sell (buy) will be immediately and automatically cancelled. A Type-1 designated Retail Order will be rejected on arrival if the PBBO is locked or crossed.[53]
- A Type 2-Retail Order may be a Limit Order designated IOC or Day or a Market Order, and will function as follows:
  - A Type 2-Retail Order IOC to buy (sell) is a Limit IOC Order that will trade first with available Retail Price Improvement Orders to sell (buy) and all other orders to sell (buy) with a working price below (above) the PBO (PBB) on the NYSE Arca Book. Any remaining quantity of the Retail Order will trade with orders to sell (buy) on the NYSE Arca Book at prices equal to or above (below) the PBO (PBB) and will be traded as a Limit IOC Order and will not route.[54]
  - A Type 2-Retail Order Day to buy (sell) is a Limit Order that will trade first with available Retail Price Improvement Orders to sell (buy) and all other orders to sell (buy) with a working price below (above) the PBO (PBB) on the NYSE Arca Book. Any remaining quantity of the Retail Order, if marketable, will trade with orders to sell (buy) on the NYSE Arca Book or route, and if non-marketable, will be ranked in the NYSE Arca Book as a Limit Order.[55]
  - A Type 2-Retail Order Market to buy (sell) is a Market Order that will trade first with available Retail Price Improvement Orders to sell (buy) and all other orders to sell (buy) with a working price below (above) the NBO (NBB). Any remaining quantity of the Retail Order will function as a Market Order.[56]

Priority and Order Allocation

Under Rule 7.44–E(l), RPI in the same security will be ranked together with all other interest ranked as Priority 3—Non-Display Orders. Odd-lot orders ranked as Priority 2—Display Orders will have priority over orders ranked Priority 3—Non-Display Orders at each price. Any remaining unexecuted RPI interest will remain available to trade with other

[40] *Id.* at (f)(2)(A)–(E).

[41] *Id.* at (f)(3).

[42] *Id.* at (g)(1)(A)–(C).

[43] *Id.* at (2).

[44] *Id.* at (3).

[45] *Id.* at (h)(1).

[46] *Id.* at (2).

[47] *Id.* at (3).

[48] *Id.* at (i)(1). In the event a member organization is disqualified from its status as an RLP pursuant to proposed Rule 107C(g), the Exchange would not reassign the appellant's securities to a different RLP until the RLP Panel has informed the appellant of its ruling. *Id.* at (i)(1)(A).

[49] *Id.* at (i)(2).

[50] *Id.* at (3).

[51] *Id.* at (4).

[52] *Id.* at (j).

[53] *Id.* at (k)(1).

[54] *Id.* at (k)(2)(A).

[55] *Id.* at (k)(2)(B).

[56] *Id.* at (k)(2)(C).

incoming Retail Orders. Any remaining unfilled quantity of the Retail Order will cancel, execute, or post to the NYSE Arca Book in accordance with Rule 7.44–E(k).

Examples of priority and order allocation are as follows:

PBBO for security ABC is $10.00 – $10.05.
RLP 1 enters a Retail Price Improvement Order to buy ABC at $10.01 for 500.
RLP 2 then enters a Retail Price Improvement Order to buy ABC at $10.02 for 50.
RLP 3 then enters a Retail Price Improvement Order to buy ABC at $10.03 for 500.

An incoming Type 1-Retail Order to sell ABC for 1,000 would trade first with RLP 3's bid for 500 at $10.03, because it is the best-priced bid, then with RLP 2's bid for 500 at $10.02, because it is the next best-priced bid. RLP 1 would not be filled because the entire size of the Retail Order to sell 1,000 would be depleted. The Retail Order trades with RPI Orders in price/time priority.

However, assume the same facts above, except that RLP 2's Retail Price Improvement Order to buy ABC at $10.02 was for 100. The incoming Retail Order to sell 1,000 would trade first with RLP 3's bid for 500 at $10.03, because it is the best-priced bid, then with RLP 2's bid for 100 at $10.02, because it is the next best-priced bid. RLP 1 would then receive an execution for 400 of its bid for 500 at $10.01, at which point the entire size of the Retail Order to sell 1,000 would be depleted.

Assume the same facts as above, except that RLP 3's order was not an RPI Order to buy ABC at $10.03, but rather, a non-displayed order to buy ABC at $10.03. The result will be similar to the result immediately above, in that the incoming Retail Order to sell 1,000 trades first with RLP 3's non-displayed bid for 500 at $10.03, because it is the best-priced bid, then with RLP 2's bid for 100 at $10.02, because it is the next best-priced bid. RLP 1 then receives an execution for 400 of its bid for 500 at $10.01, at which point the entire size of the Retail Order to sell 1,000 is depleted.

As a final example, assume the original facts, except that LMT 1 enters a displayed odd lot limit order to buy ABC at $10.02 for 60. The incoming Retail Order to sell for 1,000 trades first with RLP 3's bid for 500 at $10.03, because it is the best-priced bid, then with LMT 1's bid for 60 at $10.02 because it is the next best-priced bid and is ranked Priority 2—Display Orders and has priority over same-priced RPIs. The incoming Retail Order would then trade 440 shares with RLP 2's bid for 500 at $10.02 because it is the next priority category at that price, at which point the entire size of the Retail Order to sell 1,000 is depleted. The balance of RLP 2's bid would remain on the NYSE Arca Book and be eligible to trade with the next incoming Retail Order to sell.

To demonstrate how the different types of Retail Orders would trade with available Exchange interest, assume the following facts:

PBBO for security DEF is $19.99 – $20.01 (100 × 100).
LMT 1 enters a Limit Order to buy DEF at $20.00 for 100.
RLP 1 then enters a Retail Price Improvement Order to buy DEF at $20.003 for 100,
MPL 1 then enters a Midpoint Passive Liquidity Order to buy DEF at $21.00 for 100.

An incoming Type 2-Retail Order IOC to sell DEF for 300 at $20.00 would trade first with MPL 1's bid for 100 at $20.005, because it is the best-priced bid, then with RLP 1's bid for 100 at $20.003, because it is the next best-priced bid, and then with LMT 1's bid for 100 at $20.00 because it is the next best-priced bid, at which point the entire size of the Retail Order to sell 300 is depleted.

Assume the same facts as above except the incoming order is a Type 2-Retail Order Day to sell DEF for 500 at $20.00. The Retail Order would trade first with MPL 1's bid for 100 at $20.005, because it is the best-priced bid, then with RLP 1's bid for 100 at $20.003, because it is the next best-priced bid, and then with LMT 1's bid for 100 at $20.00 because it is the next best-priced bid. The remaining balance of the Retail Order is displayed on the NYSE Arca Book at $20.00 as a Limit Order, resulting in a PBBO of $19.99–$20.00 (100 × 200).

Assume the same facts as above except the incoming order is a Type 1-Retail Order to sell DEF for 300. The Retail Order would trade first with MPL 1's bid for 100 at $20.005, because it is the best-priced bid, and then with RLP 1's bid for 100 at $20.003. The remaining balance of the Retail Order would be cancelled and not trade with LMT 1 because Type 1-designated Retail Orders do not trade with interest on the NYSE Arca Book other than non-displayed orders and odd-lot orders priced better than the PBBO on the opposite side of the Retail Order.

Finally, to demonstrate the priority of displayed interest over Retail Price Improvement Orders, assume the following facts:

PBBO for security GHI is $30.00—$30.05.
RLP 1 enters a Retail Price Improvement Order to buy GHI at $30.02 for 100.
LMT 1 then enters a Limit Order to buy GHI at $30.02 for 100.
New PBBO of $30.02 – $30.05.
RLP 2 then enters a Retail Price Improvement Order at $30.03 for 100.

An incoming Type 2-Retail Order IOC to sell GHI for 300 at $30.01 would trade first with RLP 2's bid for 100 at $30.03, because it is the best-priced bid, then with LMT 1 for 100 at $30.02 because it is the next best-priced bid. The Retail Order would then attempt to trade with RLP 1, but because RLP 1 was priced at the PBBO and no longer price improving, RLP 1 will cancel. At that point, the remaining balance of the Retail Order will cancel because there are no remaining orders within its limit price.

Assume the same facts as above except the incoming Retail Order is for 200. The Retail Order would trade with RLP 2's bid for 100 at $30.03, because it is the best-priced bid, then with LMT 1 for 100 at $30.02 because it is the next best-priced bid. RLP 1 does not cancel because the incoming Retail Order was depleted before attempting to trade with RLP 1. RLP 1 would be eligible to trade with another incoming Retail Order because it would be priced better than the PBBO.[57]

Rationale for Making Pilot Permanent

In approving the Program on a pilot basis, the Commission required the Exchange to ''monitor the scope and operation of the Program and study the data produced during that time with respect to such issues, and will propose any modifications to the Program that may be necessary or appropriate.'' [58] As part of its assessment of the Program's potential impact, the Exchange posted core weekly and daily summary data on the Exchanges' website for public investors to review,[59] and provided additional data to the Commission regarding potential investor benefits, including the level of price improvement provided by the Program. This data included statistics about participation, frequency and level of price improvement.

In the RLP Approval Order, the Commission observed that the Program could promote competition for retail order flow among execution venues, and that this could benefit retail investors by creating additional price improvement opportunities for marketable retail order flow, most of which is currently executed in the Over-the-Counter (''OTC'') markets without ever reaching

[57] *Id.* at (l).

[58] RLP Approval Order, 78 FR at 79529.

[59] *See https://www.nyse.com/markets/liquidity-programs#nyse-nyse-mkt-rlp.*

a public exchange.[60] The Exchange sought, and believes it has achieved, the Program's goal of attracting retail order flow to the Exchange, and allowing such order flow to receive potential price improvement. As the Exchange's analysis of the Program data below demonstrates, the Program provided tangible price improvement to retail investors through a competitive pricing process. The data also demonstrates that the Program had an overall negligible impact on broader market structure.[61]

NYSE Arca launched the Program during April 2014. Between June and November 2014, the Program received orders totaling 4.3 billion shares, providing retail investors with price improvement of $1.6 million. As Table 1 below shows, during 2017, an average of 3.5 million shares were executed in the Program each day. During 2018, this number rose to 8.9 million shares per day but has since dropped to 3.6 million shares per day for the period May–July 2019. Total price improvement provided to retail investors for the 2017–2018 period was $6.2 million. Price improvement has been highly dependent on the mix of securities and volume sent into the Program. During the 2017–2018 period, price improvement was as low as $0.0015 and as high as $0.0055 per share. There are several high-priced securities with spreads greater than $0.01, which often received price improvement of a penny or more. Overall, fill rates have largely been in the low-to-mid 20% range, although there have been periods of fill rates north of 30% from September–November 2017, when there was a smaller share of very large orders.

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Table 1: Summary Execution and Market Quality Statistics

Date	Avg. Daily Orders	Avg. Shares Exec.	Fill Rate	Price Impr. $	Price Impr. BP
Jan-17	4,948	2,150,346.9	26.7%	$0.0024	1.52
Feb-17	4,673	2,066,753.6	19.6%	$0.0022	1.57
Mar-17	4,594	2,047,663.4	20.2%	$0.0022	1.83
Apr-17	4,274	1,770,560.5	20.8%	$0.0025	1.88
May-17	3,660	1,408,774.3	23.4%	$0.0035	2.83
Jun-17	3,565	1,355,331.4	23.0%	$0.0051	3.72
Jul-17	3,251	1,140,149.9	25.6%	$0.0053	3.72
Aug-17	3,588	1,195,305.6	23.3%	$0.0055	3.86
Sep-17	12,505	4,080,037.1	31.4%	$0.0037	3.53
Oct-17	31,483	9,701,364.8	38.3%	$0.0031	3.84
Nov-17	28,422	9,012,109.1	36.7%	$0.0028	3.00
Dec-17	30,116	6,424,724.3	27.9%	$0.0023	2.73
Jan-18	45,868	9,141,527.4	26.6%	$0.0016	1.59
Feb-18	53,970	11,137,027.6	25.8%	$0.0017	1.45
Mar-18	49,545	9,988,889.2	27.1%	$0.0016	1.53
Apr-18	42,509	8,311,330.0	29.2%	$0.0016	1.34
May-18	42,554	9,397,909.1	30.4%	$0.0015	1.61
Jun-18	50,235	9,022,306.1	26.9%	$0.0015	1.49
Jul-18	45,273	7,981,698.5	27.2%	$0.0015	1.43
Aug-18	44,531	8,510,678.8	27.1%	$0.0015	1.32
Sep-18	42,257	8,863,455.3	24.9%	$0.0016	1.40
Oct-18	45,321	8,398,662.1	22.9%	$0.0016	1.34
Nov-18	39,089	7,082,087.6	23.5%	$0.0015	1.21
Dec-18	45,208	9,306,425.4	22.7%	$0.0015	0.96

Table 2 shows the frequency of order sizes entered by RMOs. The largest plurality of order types were round lot or smaller, ranging between 35% in early 2017 to more than 50% of all RMO orders entered during the summer of 2018. Very large orders (greater than 15,000 shares) accounted for less than 1% of all orders since September 2017. However, as shown in Table 3, these typically accounted for 20–25% of shares placed into the Program, and ranged above 50% of all orders in early 2017. The composition of shares executed (Table 4) was more evenly distributed and fill rates (Table 5) were much lower for the largest order sizes.

60 RLP Approval Order, 78 FR at 79528.

61 *See id.* at 79529.

Table 2: Composition of Retail Taking Orders by Order Size									
Date	<= 100	101-300	301-500	501-1000	1001-2000	2001-4000	4001-7500	7500-15000	> 15000
Jan-17	35.57%	19.58%	9.67%	10.93%	7.94%	6.82%	4.96%	2.69%	1.84%
Feb-17	35.80%	18.91%	9.62%	10.75%	7.96%	6.52%	4.78%	3.04%	2.62%
Mar-17	36.62%	18.81%	8.98%	10.71%	7.80%	6.82%	4.88%	3.10%	2.27%
Apr-17	38.60%	18.86%	9.03%	10.19%	7.56%	6.46%	4.47%	2.83%	1.99%
May-17	40.30%	18.31%	8.87%	10.24%	7.48%	6.20%	4.12%	2.52%	1.97%
Jun-17	40.46%	18.00%	8.54%	9.91%	7.34%	6.57%	4.39%	3.01%	1.79%
Jul-17	43.01%	17.72%	8.54%	9.55%	7.31%	6.38%	3.88%	2.21%	1.39%
Aug-17	41.25%	17.51%	8.67%	10.16%	7.64%	6.84%	4.09%	2.35%	1.49%
Sep-17	43.67%	20.57%	8.88%	10.10%	6.50%	4.75%	2.82%	1.77%	0.94%
Oct-17	51.30%	18.58%	7.69%	8.54%	5.57%	3.86%	2.39%	1.41%	0.66%
Nov-17	52.69%	17.07%	7.54%	8.36%	5.70%	3.92%	2.49%	1.44%	0.79%
Dec-17	48.34%	18.95%	9.78%	9.23%	6.06%	4.18%	1.91%	1.01%	0.54%
Jan-18	48.69%	19.03%	9.56%	9.12%	6.05%	4.07%	1.87%	1.03%	0.58%
Feb-18	47.13%	19.62%	9.94%	9.48%	6.14%	3.98%	1.93%	1.12%	0.66%
Mar-18	46.90%	19.68%	10.08%	9.79%	6.32%	3.90%	1.76%	1.01%	0.56%
Apr-18	49.50%	19.54%	9.59%	9.63%	5.75%	3.11%	1.47%	0.90%	0.50%
May-18	48.01%	19.37%	9.82%	10.04%	6.22%	3.37%	1.61%	0.98%	0.57%
Jun-18	49.61%	19.42%	9.62%	9.58%	5.87%	3.13%	1.42%	0.85%	0.50%
Jul-18	50.10%	19.18%	9.41%	9.55%	5.91%	3.14%	1.41%	0.82%	0.48%
Aug-18	51.45%	18.14%	8.87%	9.05%	5.97%	3.41%	1.61%	0.95%	0.56%
Sep-18	47.75%	17.80%	9.15%	10.02%	7.01%	4.28%	2.08%	1.21%	0.69%
Oct-18	46.08%	19.06%	9.83%	10.23%	7.15%	4.04%	1.90%	1.04%	0.66%
Nov-18	44.43%	20.00%	10.58%	10.38%	7.29%	4.04%	1.72%	0.95%	0.61%
Dec-18	43.38%	20.42%	10.30%	10.65%	7.23%	4.11%	1.98%	1.12%	0.81%

Table 3: Composition of Retail Taking Shares Placed by Order Size									
Date	<= 100	101-300	301-500	501-1000	1001-2000	2001-4000	4001-7500	7500-15000	> 15000
Jan-17	1.09%	2.46%	2.55%	5.28%	7.39%	12.17%	16.38%	17.17%	35.50%
Feb-17	0.79%	1.73%	1.83%	3.76%	5.37%	8.42%	11.49%	13.98%	52.62%
Mar-17	0.82%	1.75%	1.75%	3.81%	5.38%	9.01%	12.11%	14.43%	50.95%
Apr-17	0.93%	1.94%	1.95%	4.02%	5.75%	9.47%	12.23%	14.53%	49.18%
May-17	1.16%	2.31%	2.32%	4.89%	6.87%	11.02%	13.60%	15.89%	41.93%
Jun-17	1.15%	2.28%	2.23%	4.70%	6.73%	11.63%	14.52%	18.99%	37.77%
Jul-17	1.48%	2.68%	2.69%	5.47%	8.08%	13.59%	15.42%	16.69%	33.90%
Aug-17	1.43%	2.54%	2.61%	5.55%	8.02%	13.95%	15.61%	16.69%	33.61%
Sep-17	2.04%	4.00%	3.62%	7.56%	9.49%	13.24%	14.71%	17.30%	28.04%
Oct-17	2.70%	4.65%	4.06%	8.27%	10.53%	13.97%	15.70%	17.65%	22.46%
Nov-17	2.54%	4.03%	3.72%	7.59%	10.08%	13.14%	15.23%	16.75%	26.92%
Dec-17	2.98%	4.97%	5.57%	9.52%	11.84%	15.35%	13.17%	13.61%	22.99%
Jan-18	3.07%	5.06%	5.50%	9.51%	11.99%	15.35%	13.31%	14.16%	22.05%
Feb-18	2.91%	4.91%	5.32%	9.22%	11.43%	14.08%	12.87%	14.63%	24.61%
Mar-18	3.20%	5.30%	5.72%	10.20%	12.64%	14.92%	12.71%	14.05%	21.25%
Apr-18	3.80%	5.75%	5.71%	10.85%	12.70%	13.34%	11.92%	13.84%	22.09%
May-18	3.43%	5.28%	5.40%	10.49%	12.75%	13.28%	12.08%	14.04%	23.25%
Jun-18	3.81%	5.74%	5.73%	10.83%	13.08%	13.42%	11.47%	13.20%	22.71%
Jul-18	3.90%	5.83%	5.76%	11.10%	13.50%	13.81%	11.74%	13.17%	21.19%
Aug-18	3.53%	5.07%	5.03%	9.71%	12.51%	13.94%	12.23%	13.88%	24.11%
Sep-18	2.87%	4.19%	4.34%	9.08%	12.48%	14.68%	13.35%	14.78%	24.24%
Oct-18	3.11%	4.67%	4.81%	9.53%	13.15%	14.38%	12.71%	13.17%	24.46%
Nov-18	3.25%	5.10%	5.39%	10.09%	13.96%	15.05%	12.03%	12.60%	22.53%
Dec-18	2.73%	4.46%	4.52%	8.77%	11.69%	13.00%	11.89%	12.72%	30.23%

Table 4: Composition of Retail Taking Shares Executed by Order Size

Date	<= 100	101-300	301-500	501-1000	1001-2000	2001-4000	4001-7500	7500-15000	> 15000
Jan-17	4.01%	8.52%	8.01%	14.72%	15.07%	15.95%	14.77%	8.89%	10.06%
Feb-17	3.95%	8.16%	7.84%	14.42%	15.30%	15.74%	13.21%	9.86%	11.52%
Mar-17	4.00%	7.97%	7.28%	14.17%	14.81%	16.15%	14.23%	10.99%	10.40%
Apr-17	4.42%	8.67%	7.92%	14.39%	15.45%	16.39%	13.59%	10.92%	8.25%
May-17	4.86%	9.10%	8.14%	14.96%	15.25%	15.49%	12.72%	9.84%	9.64%
Jun-17	4.88%	8.96%	7.66%	13.62%	14.31%	15.56%	13.34%	12.69%	8.97%
Jul-17	5.70%	9.47%	8.21%	14.29%	14.57%	15.88%	13.33%	9.91%	8.65%
Aug-17	6.02%	9.78%	8.69%	15.23%	15.43%	16.66%	12.28%	8.22%	7.69%
Sep-17	6.23%	11.46%	9.23%	16.70%	15.26%	14.15%	10.23%	9.87%	6.88%
Oct-17	6.78%	11.09%	8.69%	15.45%	14.89%	13.31%	13.54%	10.59%	5.66%
Nov-17	6.62%	9.84%	8.11%	14.43%	14.59%	13.45%	13.98%	10.47%	8.52%
Dec-17	7.39%	10.23%	8.16%	14.09%	14.41%	14.79%	11.75%	10.56%	8.62%
Jan-18	7.33%	10.09%	8.29%	14.29%	14.66%	14.66%	11.46%	10.33%	8.89%
Feb-18	6.06%	9.48%	8.80%	15.88%	16.01%	14.88%	11.30%	9.61%	8.00%
Mar-18	5.93%	9.03%	8.60%	16.06%	16.52%	15.61%	11.73%	9.19%	7.33%
Apr-18	6.47%	9.19%	8.52%	16.52%	16.67%	14.96%	12.17%	9.40%	6.11%
May-18	5.86%	8.37%	8.02%	16.22%	16.64%	14.99%	12.20%	9.78%	7.92%
Jun-18	6.68%	9.35%	8.58%	17.21%	16.91%	15.03%	11.09%	8.20%	6.96%
Jul-18	6.68%	9.23%	8.46%	16.96%	16.69%	15.11%	11.77%	8.25%	6.85%
Aug-18	6.90%	8.84%	8.23%	16.60%	16.85%	16.16%	11.83%	8.34%	6.25%
Sep-18	5.80%	7.81%	7.53%	16.39%	17.41%	16.57%	12.69%	8.99%	6.81%
Oct-18	6.05%	8.55%	7.90%	15.97%	18.24%	17.16%	11.48%	7.86%	6.80%
Nov-18	6.03%	8.74%	8.19%	15.85%	17.76%	18.04%	11.22%	7.84%	6.33%
Dec-18	5.70%	8.78%	8.08%	15.35%	16.89%	16.72%	11.22%	8.57%	8.68%

Table 5 highlights that while the Exchange indicates when there is price improving liquidity available on CQS, UTP and proprietary feeds, not all customers necessarily read that flag. Beginning in December 2017, the Exchange believes that one customer began sending orders without checking the flag, resulting in poor fill rates, even for orders less than or equal to 100 shares. This is clearly evidenced by the sharp drop in fill rates for orders of one round lot or less.

Table 5: Fill Rates by Retail Take Order Size

Date	<= 100	101-300	301-500	501-1000	1001-2000	2001-4000	4001-7500	7500-15000	> 15000
Jan-17	98.45%	92.36%	83.80%	74.41%	54.47%	34.99%	24.07%	13.83%	7.57%
Feb-17	98.58%	92.59%	83.94%	75.32%	55.99%	36.72%	22.58%	13.85%	4.30%
Mar-17	98.42%	92.29%	84.10%	75.18%	55.72%	36.25%	23.76%	15.40%	4.13%
Apr-17	98.48%	92.97%	84.25%	74.49%	55.89%	35.96%	23.10%	15.63%	3.49%
May-17	98.37%	92.20%	82.09%	71.78%	51.99%	32.94%	21.92%	14.51%	5.39%
Jun-17	97.95%	90.43%	79.20%	66.75%	48.97%	30.82%	21.17%	15.40%	5.47%
Jul-17	98.43%	90.70%	78.40%	67.01%	46.21%	29.96%	22.18%	15.22%	6.54%
Aug-17	98.22%	89.85%	77.73%	63.86%	44.84%	27.81%	18.33%	11.47%	5.33%
Sep-17	95.86%	90.01%	79.95%	69.31%	50.46%	33.53%	21.84%	17.90%	7.70%
Oct-17	96.18%	91.31%	82.10%	71.63%	54.18%	36.50%	33.04%	23.00%	9.66%
Nov-17	95.68%	89.61%	80.07%	69.86%	53.12%	37.58%	33.70%	22.96%	11.62%
Dec-17	69.27%	57.54%	40.88%	41.32%	33.95%	26.90%	24.90%	21.66%	10.47%
Jan-18	63.42%	53.07%	40.04%	39.95%	32.52%	25.40%	22.89%	19.41%	10.72%
Feb-18	53.62%	49.73%	42.62%	44.36%	36.09%	27.23%	22.63%	16.92%	8.38%
Mar-18	50.29%	46.24%	40.83%	42.76%	35.49%	28.39%	25.05%	17.75%	9.37%
Apr-18	49.80%	46.74%	43.61%	44.47%	38.35%	32.78%	29.84%	19.85%	8.08%
May-18	51.89%	48.14%	45.21%	47.03%	39.69%	34.32%	30.70%	21.19%	10.37%
Jun-18	47.18%	43.88%	40.34%	42.80%	34.83%	30.15%	26.04%	16.72%	8.25%
Jul-18	46.53%	43.06%	39.98%	41.52%	33.62%	29.76%	27.27%	17.04%	8.78%
Aug-18	52.83%	47.20%	44.32%	46.29%	36.47%	31.39%	26.17%	16.27%	7.02%
Sep-18	50.43%	46.44%	43.18%	44.96%	34.76%	28.11%	23.68%	15.16%	6.99%
Oct-18	44.62%	41.89%	37.59%	38.37%	31.77%	27.35%	20.68%	13.67%	6.37%
Nov-18	43.53%	40.21%	35.66%	36.87%	29.87%	28.15%	21.88%	14.61%	6.60%
Dec-18	47.49%	44.75%	40.64%	39.80%	32.83%	29.25%	21.46%	15.32%	6.53%

Table 6 details the development of order sizes received in the Program over time. Program orders taking liquidity sent to the Exchange averaged around 1,000 shares for the Program's recent history, with median order size mostly around 400 shares. Liquidity providing orders tend to be smaller, and mostly average well below 1,000 shares, with the median below 200 shares most months. Since any firm can enter a liquidity providing order, there may be multiple providers offering liquidity inside the quote, allowing for high fill rates.

Table 6: Order Size Details

Date	Provide Orders		Take Orders	
	Average	Median	Average	Median
Jan-17	666	300	1,628	250
Feb-17	669	300	2,252	266
Mar-17	685	300	2,204	240
Apr-17	657	300	1,993	200
May-17	649	400	1,642	200
Jun-17	645	300	1,650	200
Jul-17	628	300	1,368	200
Aug-17	613	300	1,430	200
Sep-17	641	300	1,040	162
Oct-17	784	400	804	100
Nov-17	1,083	400	863	100
Dec-17	1,258	300	764	122
Jan-18	1,325	400	749	120
Feb-18	1,069	400	801	133
Mar-18	1,257	400	743	133
Apr-18	1,237	400	669	102
May-18	1,402	400	726	133
Jun-18	1,252	400	667	106
Jul-18	1,267	400	648	100
Aug-18	1,220	400	706	100
Sep-18	1,209	400	842	133
Oct-18	1,040	400	809	150
Nov-18	1,075	400	772	166
Dec-18	1,000	500	906	166

Table 7: Market Share Frequency of Retail Orders

Distribution	Daily Results		Two Year Aggregate	
	Count	Percentage	Count	Percentage
> 50%	273	0.0109%	0	0.0000%
25-50%	1,269	0.0505%	0	0.0000%
10-25%	7,231	0.2879%	0	0.0000%
5-10%	18,222	0.7255%	0	0.0000%
1-5%	137,490	5.4744%	220	3.6975%
0.75%-1%	38,384	1.5283%	190	3.1933%
0.50%-0.75%	57,841	2.3030%	462	7.7647%
0.25%-0.50%	101,872	4.0562%	1,116	18.7563%
0.10%-0.25%	128,039	5.0981%	1,345	22.6050%
0.05%-0.10%	80,623	3.2101%	893	15.0084%
0.01%-0.05%	115,705	4.6070%	1,079	18.1345%
<0.01%	1,824,574	72.6481%	645	10.8403%

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Table 7 shows that during the two most recent years, no security maintained more than 5% of total volume in the program, and nearly two-thirds of all securities that had executions in the program averaged less than 0.25% share of consolidated trading. The Exchange notes that these statistics largely overstate the total size of the Program, since many securities rarely or never receive an order in the Program.

Although the Program provides the opportunity to achieve significant price improvement, the Program has not generated significant activity, relative to the overall market. The Program competes with wholesalers and similar programs offered by, among others, Cboe BYX Exchange, Inc. (''Cboe BYX''), and Nasdaq BX, the latter of which has been approved on a permanent basis.[62]

Difference in Differences Analysis

The Exchange also analyzed market quality and market share impact by using the difference in differences statistical technique. Difference in differences (''DID'') requires studying the differential effect of data measured between a treatment group and a control group. The two groups are measured during two or more different time periods, usually a period before ''treatment'' and at least one time period after ''treatment'', that is, a time period after which the treatment group is impacted but the control group is not. The assumption is that the control group and the treatment group are otherwise impacted equally by extraneous factors, *i.e.,* that the other impacts are parallel. For example, when measuring average quoted spreads, if spreads increase by ten basis points in the control group, and 12 basis points in the test group, the assumption would be that the two basis point differential was caused by the treatment.

Because all Tape B and Tape C securities (all securities not listed on the NYSE) are eligible to participate in the Program, a natural control group does not exist for the securities participating in the Program. Hence, there is a possibility that the lack of activity in the Program could have been the result of factors that DID cannot measure. Nonetheless, to produce a control group, the Exchange identified the 50 most active ticker securities in the Program as measured by share of consolidated volume following launch of the Program. The Exchange then determined a matched sample, without replacement, using consolidated volume, volume weighted average price, and consolidated quoted spread in basis points. The matched sample compared the 50 most active ticker securities in the Program with all securities that had very low Program volume. The matching criteria minimized the sum of the squares of the percent difference between the top 50 active ticker securities and potential matches. The best 25 matches were then selected.

The Exchange executed two DID analyses:

1. Six months prior to launch of the Program (November 2013–April 2014) compared to six months following launch, excluding the first month of the Program (June 2014–November 2014) for securities with a consolidated average daily volume (''CADV'') of at least 500,000 during the pre-treatment and treatment periods. Note that the program launched during April 2014, but there were only six retail taking orders entered during that month.

2. Six months prior to launch of the Program (November 2013–April 2014) compared to all of 2017 and 2018 for securities with a CADV of at least 500,000 during the pre-treatment and treatment periods.

Because there was no natural control group, the Exchange employed flexible matching criteria. In addition to the CADV restrictions, the Exchange utilized a control versus treatment CADV ratio of 3:1, a volume weighted average price (''VWAP'') of 2:1, and a spread of 2:1. The Exchange also required potential control group stocks to have a share of Program trading less than 1/10th of the lowest of the top 50 securities for the first trading period. The Exchange excluded securities that were in the test groups of the Tick Size Pilot Program[63] from consideration in matching securities for the DID analysis of the 2017–2018 period. Preferred stocks, warrants and rights were excluded from the DID analysis for both periods. Finally, because the Program is only valid for stocks trading at or above $1.00, any security with a low price during the pre-treatment or the treatment period below $1.00 was also excluded. Securities could not be listed on the NYSE during the pre-treatment period or during the treatment period.

The Exchange selected the top 25 securities by minimum differences as described above.

DID Results for Period Around Program Launch

As noted above, the Program launched in April 2014. Only six orders RMO orders were entered during the month. The Exchange selected November 2013–April 2014 to represent the pre-launch period. To allow for Program adoption, the Exchange excluded May 2014 and chose June 2014–November 2014 to represent the post-launch period. Tables 8A and 8B show key attributes for the securities selected for the first matched sample.

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[62] *See* note 17, *supra. See also* Securities Exchange Act Release No. 86742 (August 23, 2019), 84 FR 45575 (August 29, 2019) (SR–CboeBYX–2019–014) (filing to make permanent Cboe BYX Rule 11.24, which sets forth that exchange's pilot Retail Price Improvement Program).

[63] The Tick Size Pilot Program is a National Market System (''NMS'') plan designed to allow the Commission, market participants and the public to assess the impact of wider minimum quoting and trading increments—or tick sizes—on the liquidity and trading of the common stocks of certain small capitalization companies.

Table 8A: NYSE Arca Retail Program Matched Sample: Nov. 2013 - Apr. 2014 vs. June 2014 - Nov. 2014							
Treatment Symbol	Pre-period CADV	Pre-Period VWAP	Pre-period Spread	Control Symbol	Pre-period CADV	Pre-Period VWAP	Pre-period Spread
AGQ	1,004,732	$30.35	7.33	BPOP	916,093	$28.40	7.61
AMLP	3,007,338	$17.60	6.00	NWSA	3,357,486	$17.26	6.05
BKLN	2,614,350	$24.83	4.00	ZION	2,352,944	$30.03	3.99
CWB	572,853	$47.70	9.93	PRXL	629,762	$47.08	10.76
DEM	795,490	$48.96	6.18	EDZ	973,181	$44.80	6.43
DGAZ	12,319,303	$4.08	24.65	FTR	11,062,445	$5.00	20.30
FAS	4,451,848	$86.49	3.28	SNDK	3,947,492	$73.36	3.25
FAZ	5,541,906	$21.99	4.63	AGNC	5,745,540	$21.09	4.87
PFF	1,568,157	$38.08	3.02	MCHP	1,989,891	$44.81	3.22
PGX	812,806	$13.84	7.63	CEF	971,072	$13.96	7.76
QID	4,541,066	$46.15	4.02	NTAP	4,558,899	$39.63	2.96
SCZ	586,080	$51.07	6.92	MCHI	591,010	$46.08	6.72
SDS	10,691,086	$30.24	3.18	FOXA	12,377,657	$32.83	3.00
SLV	7,440,219	$19.47	5.01	FITB	7,800,571	$21.24	4.82
SPXL	1,782,496	$61.03	2.94	PCAR	1,777,451	$61.20	3.29
SPXS	2,170,222	$33.73	3.28	URBN	2,158,361	$36.88	3.89
SPXU	4,455,952	$39.97	3.98	MYL	4,942,669	$47.49	3.45
SQQQ	3,675,009	$44.98	4.28	STX	3,408,889	$52.77	3.98
SRTY	900,263	$29.47	6.88	GNTX	902,148	$30.97	7.19
TAN	616,372	$41.66	19.15	NXST	677,686	$42.86	17.83
TBT	3,386,397	$72.92	2.24	DTV	3,943,830	$71.61	2.51
TWM	2,032,802	$33.47	5.28	APOL	2,290,751	$29.99	5.48
TZA	15,400,733	$17.34	5.79	AMAT	12,540,915	$18.30	5.57
UGAZ	1,841,313	$23.73	16.05	ACAD	1,866,033	$23.89	15.37
UPRO	2,185,985	$92.31	2.90	INTU	1,844,913	$75.18	2.85

Table 8B: NYSE Arca Retail Program Matched Sample: Nov. 2013 - Apr. 2014 vs. June 2014 - Nov. 2014 Comparive Statistics							
Treatment Symbol	Pre-period TRF	Post-period TRF	RTO Share of CADV	Control Symbol	Pre-period TRF	Post-period TRF	RTO Share of CADV
AGQ	38.8%	39.9%	1.25%	BPOP	31.0%	38.9%	0.02%
AMLP	56.4%	52.9%	0.98%	NWSA	31.0%	32.0%	0.00%
BKLN	56.7%	54.5%	1.00%	ZION	31.8%	31.0%	0.00%
CWB	50.1%	56.4%	1.01%	PRXL	35.7%	29.8%	0.01%
DEM	54.6%	53.0%	1.16%	EDZ	16.2%	8.3%	0.08%
DGAZ	56.0%	54.6%	1.18%	FTR	48.0%	39.7%	0.02%
FAS	19.7%	21.3%	1.15%	SNDK	34.1%	32.8%	0.03%
FAZ	26.3%	28.7%	1.92%	AGNC	39.9%	40.1%	0.03%
PFF	59.5%	60.9%	1.64%	MCHP	39.9%	36.1%	0.02%
PGX	65.8%	69.3%	2.94%	CEF	45.6%	46.4%	0.08%
QID	28.6%	32.1%	2.91%	NTAP	30.6%	28.6%	0.02%
SCZ	58.2%	66.2%	1.21%	MCHI	39.2%	41.7%	0.03%
SDS	38.7%	42.4%	3.82%	FOXA	33.3%	35.7%	0.00%
SLV	35.3%	31.3%	0.91%	FITB	30.1%	32.2%	0.00%
SPXL	31.0%	33.9%	1.39%	PCAR	26.3%	27.8%	0.02%
SPXS	28.8%	33.4%	1.78%	URBN	34.0%	32.0%	0.01%
SPXU	34.2%	26.4%	1.28%	MYL	32.7%	34.9%	0.01%
SQQQ	25.8%	31.4%	1.16%	STX	30.0%	29.7%	0.01%
SRTY	23.5%	19.8%	0.88%	GNTX	31.8%	33.0%	0.04%
TAN	45.2%	46.3%	1.99%	NXST	38.0%	31.7%	0.01%
TBT	24.5%	27.3%	1.43%	DTV	29.3%	36.8%	0.01%
TWM	33.6%	22.5%	3.18%	APOL	31.1%	27.5%	0.01%
TZA	45.5%	41.1%	3.52%	AMAT	32.6%	31.1%	0.01%
UGAZ	47.6%	50.0%	1.40%	ACAD	33.9%	33.4%	0.02%
UPRO	29.5%	32.6%	1.41%	INTU	27.8%	26.1%	0.01%

For the period 2017–2018 matched sample, we excluded securities that were part of the Tick Size Pilot Program. Inclusion of those securities could have resulted in exogenous influences skewing the analyses.

Table 9A: NYSE Arca Retail Program Matched Sample: Nov. 2013 - Apr. 2014 vs. 2017 -2018

Treatment Symbol	Pre-period CADV	Pre-Period VWAP	Pre-period Spread	Control Symbol	Pre-period CADV	Pre-Period VWAP	Pre-period Spread
AMLP	3,007,338	$17.60	6.00	NWSA	3,357,486	$17.26	6.05
CWB	572,853	$47.70	9.93	AZPN	517,518	$42.03	10.74
ERY	524,489	$20.52	7.41	ROIC	448,710	$14.81	9.01
FAS	4,451,848	$86.49	3.28	EWW	3,131,481	$63.93	3.32
FAZ	5,541,906	$21.99	4.63	EA	5,085,415	$25.51	4.31
FDN	510,853	$58.60	5.57	CTAS	591,467	$58.07	5.74
IAU	3,598,381	$12.28	8.03	ERIC	3,997,054	$12.43	8.01
PCY	694,303	$27.36	5.30	CPRT	667,005	$34.74	6.74
PGX	812,806	$13.84	7.63	PPC	807,418	$17.63	10.15
QID	4,541,066	$46.15	4.02	NTAP	4,558,899	$39.63	2.96
SCO	1,453,969	$31.80	3.46	NDAQ	1,565,999	$37.66	4.44
SDOW	829,547	$31.18	3.82	SEIC	732,007	$33.51	5.37
SDS	10,691,086	$30.24	3.18	FOXA	12,377,657	$32.83	3.00
SH	3,437,569	$25.51	4.00	GT	4,058,482	$24.76	4.46
SPXL	1,782,496	$61.03	2.94	CHRW	2,045,513	$55.89	3.17
SPXS	2,170,222	$33.73	3.28	URBN	2,158,361	$36.88	3.89
SPXU	4,455,952	$39.97	3.98	MYL	4,942,669	$47.49	3.45
SQQQ	3,675,009	$44.98	4.28	STX	3,408,889	$52.77	3.98
SRTY	900,263	$29.47	6.88	GNTX	902,148	$30.97	7.19
SVXY	1,026,925	$77.59	4.82	CHKP	1,036,819	$64.52	5.10
TQQQ	2,393,503	$72.25	2.93	BBBY	2,517,385	$68.83	2.84
TVIX	7,701,816	$7.79	13.18	WEN	7,961,985	$8.91	11.33
TWM	2,032,802	$33.47	5.28	LKQ	2,488,574	$28.39	5.39
UPRO	2,185,985	$92.31	2.90	INTU	1,844,913	$75.18	2.85
UVXY	6,793,121	$37.77	7.71	YNDX	4,751,282	$33.26	6.21

Table 9B: NYSE Arca Retail Program Matched Sample: Nov. 2013 - Apr. 2014 vs. 2017 - 2018 Comparive Statistics

Treatment Symbol	Pre-period TRF	Post-period TRF	RTO Share of CADV	Control Symbol	Pre-period TRF	Post-period TRF	RTO Share of CADV
AMLP	56.4%	41.8%	0.98%	NWSA	31.0%	29.6%	0.00%
CWB	50.1%	58.3%	1.01%	AZPN	33.9%	31.5%	0.03%
ERY	25.1%	34.4%	0.57%	ROIC	35.2%	27.6%	0.01%
FAS	19.7%	31.1%	1.15%	EWW	21.1%	25.1%	0.08%
FAZ	26.3%	34.0%	1.92%	EA	33.7%	33.7%	0.00%
FDN	50.1%	53.1%	0.71%	CTAS	26.0%	27.3%	0.01%
IAU	51.3%	32.6%	0.43%	ERIC	36.7%	39.1%	0.00%
PCY	57.5%	50.3%	0.34%	CPRT	33.2%	33.3%	0.03%
PGX	65.8%	68.7%	2.94%	PPC	31.7%	30.5%	0.02%
QID	28.6%	37.8%	2.91%	NTAP	30.6%	30.4%	0.02%
SCO	25.5%	37.6%	0.25%	NDAQ	31.7%	27.4%	0.01%
SDOW	31.0%	36.3%	1.12%	SEIC	28.1%	29.0%	0.02%
SDS	38.7%	36.7%	3.82%	FOXA	33.3%	35.9%	0.00%
SH	51.2%	33.9%	0.78%	GT	34.8%	31.3%	0.01%
SPXL	31.0%	46.2%	1.39%	CHRW	33.8%	29.3%	0.02%
SPXS	28.8%	41.1%	1.78%	URBN	34.0%	32.9%	0.01%
SPXU	34.2%	41.4%	1.28%	MYL	32.7%	31.4%	0.01%
SQQQ	25.8%	42.3%	1.16%	STX	30.0%	33.5%	0.01%
SRTY	23.5%	23.4%	0.88%	GNTX	31.8%	30.9%	0.04%
SVXY	24.5%	29.1%	0.12%	CHKP	33.0%	30.3%	0.02%
TQQQ	31.3%	44.8%	0.27%	BBBY	30.9%	31.4%	0.02%
TVIX	42.7%	41.9%	0.75%	WEN	37.9%	37.3%	0.02%
TWM	33.6%	27.8%	3.18%	LKQ	37.2%	33.5%	0.03%
UPRO	29.5%	39.3%	1.41%	INTU	27.8%	29.7%	0.01%
UVXY	29.1%	39.6%	0.21%	YNDX	41.1%	35.8%	0.01%

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The Exchange's DID analysis utilized the 25 treated and 25 control securities noted above for the following statistics:

- Time-weighted NYSE Arca quoted spreads in basis points.
- Time-weighted NYSE Arca quoted spreads in dollars and cents.
- Time-weighted consolidated quoted spreads in basis points.
- Time-weighted consolidated quoted spreads in dollars and cents.
- Trade Reporting Facility (''TRF'') share of volume during regular trading hours, excluding auctions.
- TRF share of volume, full day, including auctions.
- NYSE Arca share of volume during regular trading hours, excluding auctions.
- NYSE Arca share of volume, full day, including auctions.
- Trade-to-trade price change in basis points.

The Exchange calculated the DID regression for each of these statistics using the following formula:

$$Y_{it} = B_0 + B_1T + B_2I + B_3IT$$

where T equals zero during the pre-period and equals one during the treatment period, and where I is the Intervention.

As Table 10 shows, only one statistic showed any significance, and that at the weak 90% level. NYSE Arca market share during regular hours trading, excluding auctions, increased during the early comparison period.

Table 10: DiD Results (Nov. 2013 - Apr. 2014 vs. June 2014 - Nov. 2014)		
Estimated Measure	Estimate	Standard Error
Time-weighted NYSE Arca Spread^	1.6170	3.1540
Time-weighted NYSE Arca $ Spread	0.0070	0.0126
Time-weighted Consolidated Spread^	0.7520	2.0306
Time-weightedConsolidated $ Spread	0.0015	0.0069
NYSE Arca Regular Hours Share, no auctions	0.0344 .	0.0190
NYSE Arca Full Day Share	0.0132	0.0191
TRF Regular Hours Share, no auctions	0.0304	0.0439
TRF Full Day Share	0.0198	0.0435
Trade-to-trade price change	0.0458	0.7037

^ - Spreads in basis points unless otherwise noted

Significance: *** = 99.9%, ** = 99%, * = 95%, . = 90%

Table 11: DiD Results (Nov. 2013 - Apr. 2014 vs.2017 - 2018)		
Estimated Measure	Estimate	Standard Error
Time-weighted NYSE Arca Spread^	-7.6190 .	4.2070
Time-weighted NYSE Arca $ Spread	-0.0476 *	0.2097
Time-weighted Consolidated Spread^	-1.6891	1.8845
Time-weightedConsolidated $ Spread	-0.0128 .	0.0077
NYSE Arca Regular Hours Share, no auctions	0.0834***	0.0179
NYSE Arca Full Day Share	0.0093	0.0209
TRF Regular Hours Share, no auctions	0.0243	0.0431
TRF Full Day Share	0.0144	0.0426
Trade-to-trade price change	-0.0915	2.5654

^ - Spreads in basis points unless otherwise noted

Significance: *** = 99.9%, ** = 99%, * = 95%, . = 90%

Table 12: Share of Volume Based on Daily VWAP*						
	<$5.00	$5-$10	$10-$25	$25-$50	$50-$100	. $100
TRF Share	52.23%	43.47%	38.98%	34.95%	34.29%	36.86%
NYSE Arca RLP % of CADV	0.14%	0.33%	0.26%	0.15%	0.14%	0.14%

* - Includes all Tape B and Tape C Symbols

Table 11 details results for the DID analysis comparing the pre-Program period during 2013–2014 with trading in 2017 and 2018. The DID regression shows, in all spread cases, that spreads, adjusted for control group versus treatment group, resulted in favorable spread changes. With a 90% confidence level, NYSE Arca basis point spreads fell relative to the treatment group and NYSE Arca dollar-spreads fell with 95% confidence levels. Consolidated spreads in basis points also fell according to the regression, but were not statistically significant. Dollar consolidated spreads did drop, but with a 90% confidence level. NYSE Arca regular hours share showed an increase in share at the 99.9% confidence level. This is not surprising since, as noted earlier, the Program achieved about 8% share of NYSE Arca trading during 2017. As discussed below, the more significant drops in dollar-based spreads were expected as the nature of our matching effort, resulting in the selection of stocks that saw price decreases, impacted the spread calculations, and also may have impacted the NYSE Arca regular hours share.

As Table 12 shows, lower priced stocks tend to more likely trade on the TRF as well as in the Program. Even with the large share increase in NYSE Arca, TRF share also rose, highlighting the impact of the out-of-sample matching criteria. As noted in the analysis of the NYSE Retail Program, the matching criteria used tends to focus on stocks with price drops, so the Exchange expected to see a fall in currency-based spreads.[64] Unlike the NYSE's experience, however, the price differences were more muted from this

[64] *See* Release No. 85160, 84 FR at 5768.

matching exercise, which allowed for a small regression-calculated drop in in basis points spreads as well. Average spreads in basis points did increase slightly, both for treatment and control securities, but the DID analysis resulted in a favorable regression for Treatment stocks compared to Control stocks. The impact of the matching criteria is still present. Dollar spreads for treatment stocks fell from $0.018 to $0.017 as VWAP dropped to $34.48 from $40.05. Control stock VWAPS rose to $4.25 from $38.32, resulting in dollar spreads rising to $0.030 from $0.019. Basis points spreads increased for control stocks (5.59 to 5.69) and for treatment stocks (5.70 versus 5.38), but the basis point increase was due to stocks being tick constrained as prices fell during the post-period. In any event, the regression implicated better performance for Treatment stocks than control group securities.

All Tape B and Tape C Exchange-traded securities were eligible to participate in the program when it launched in 2014. Because of this factor, there was not a true control group for the Exchange to employ in its DID analysis. Instead, for purposes of making the Program permanent, the Exchange created an artificial control group and treatment group by identifying a matched sample based on the securities with the highest share of consolidated volume in the Program and matching these securities based on volume weighted average price, time-weighted quoted spread and CADV during the pre-treatment period (subject to the criteria noted above). By necessity, however, the percentage of activity in the Program itself had to be based on the post-treatment period.

This methodology provided several insights and permitted the Exchange to offer a more thorough analysis of the Program's impact. However, the Exchange believes that selection of securities with the highest share of consolidated volume in the Program for the treatment group created a biased treatment group. Securities with lower prices tend to trade more actively in the TRF as well as in the Program (Table 12). The percentage value of on low-price stocks provides greater savings to investors. For example, $0.0010 price improvement per share for a $5.00 stock saves an investor $2.00 per $10,000 invested. The same per share price improvement on a $50 stock is worth just $0.20. Table 12 shows this relationship for the 2017–2018 treatment period used in the analysis for securities eligible for the Program.

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Table 13: Time-weighted Consolidated Spread and VWAP Comparison of 2013-2014 Sample								
Treatment Securities								
Symbol	Pre-VWAP	Post-VWAP	Pre-$ Spread	Post-$ Spread	Pre BP Spread	Post BP Spread	VWAP Pre/Post	BP Post/Pre
AGQ	$30.35	$56.48	$0.035	$0.095	7.33	18.08	0.5	2.5
AMLP	$17.60	$18.59	$0.010	$0.010	6.00	5.42	0.9	0.9
BKLN	$24.83	$24.52	$0.010	$0.010	4.00	4.01	1.0	1.0
CWB	$47.70	$49.36	$0.047	$0.046	9.93	9.21	1.0	0.9
DEM	$48.96	$49.62	$0.030	$0.033	6.18	6.52	1.0	1.1
DGAZ	$4.08	$3.65	$0.014	$0.010	24.65	26.72	1.1	1.1
FAS	$86.49	$101.73	$0.028	$0.051	3.28	4.95	0.9	1.5
FAZ	$21.99	$17.07	$0.010	$0.010	4.63	6.12	1.3	1.3
PFF	$38.08	$39.59	$0.011	$0.010	3.02	3.02	1.0	1.0
PGX	$13.84	$14.53	$0.011	$0.011	7.63	7.38	1.0	1.0
QID	$46.15	$46.74	$0.010	$0.010	4.02	2.06	1.0	0.5
SCZ	$51.07	$49.87	$0.035	$0.032	6.92	6.40	1.0	0.9
SDS	$30.24	$25.09	$0.010	$0.010	3.18	4.04	1.2	1.3
SLV	$19.47	$17.67	$0.010	$0.010	5.01	5.52	1.1	1.1
SPXL	$61.03	$76.50	$0.018	$0.023	2.94	3.05	0.8	1.0
SPXS	$33.73	$25.53	$0.011	$0.010	3.28	4.10	1.3	1.3
SPXU	$39.97	$46.23	$0.011	$0.010	3.98	2.21	0.9	0.6
SQQQ	$44.98	$38.20	$0.012	$0.010	4.28	2.83	1.2	0.7
SRTY	$29.47	$39.41	$0.017	$0.019	6.88	4.75	0.7	0.7
TAN	$41.66	$40.50	$0.077	$0.072	19.15	17.83	1.0	0.9
TBT	$72.92	$57.05	$0.016	$0.011	2.24	2.02	1.3	0.9
TWM	$33.47	$46.41	$0.013	$0.013	5.28	2.67	0.7	0.5
TZA	$17.34	$15.46	$0.010	$0.010	5.79	6.63	1.1	1.1
UGAZ	$23.73	$14.94	$0.040	$0.022	16.05	12.79	1.6	0.8
UPRO	$92.31	$115.12	$0.027	$0.038	2.90	3.25	0.8	1.1
Average	$38.86	$41.19	$0.021	$0.023	6.74	6.86	1.0	1.0
Control Securities								
Symbol	Pre-VWAP	Post-VWAP	Pre-$ Spread	Post-$ Spread	pre BP Spread	Post BP Spread	VWAP Pre/Post	BP Post/Pre
BPOP	$28.40	$31.76	$0.024	$0.022	7.61	7.76	0.9	1.0
NWSA	$17.26	$16.55	$0.010	$0.010	6.05	6.27	1.0	1.0
ZION	$30.03	$28.80	$0.011	$0.011	3.99	3.97	1.0	1.0
PRXL	$47.08	$56.70	$0.052	$0.052	10.76	9.12	0.8	0.8
EDZ	$44.80	$32.24	$0.015	$0.028	6.43	4.75	1.4	0.7
FTR	$5.00	$6.35	$0.010	$0.010	20.30	15.98	0.8	0.8
SNDK	$73.36	$95.64	$0.032	$0.024	3.25	3.34	0.8	1.0
AGNC	$21.09	$22.90	$0.010	$0.010	4.87	4.10	0.9	0.8
MCHP	$44.81	$44.73	$0.015	$0.014	3.22	3.39	1.0	1.1
CEF	$13.96	$12.77	$0.010	$0.011	7.76	7.71	1.1	1.0
NTAP	$39.63	$39.50	$0.011	$0.011	2.96	2.99	1.0	1.0
MCHI	$46.08	$48.83	$0.025	$0.031	6.72	5.13	0.9	0.8
FOXA	$32.83	$34.20	$0.010	$0.010	3.00	3.00	1.0	1.0

FITB	$21.24	$20.36	$0.010	$0.010	4.82	5.02	1.0	1.0
PCAR	$61.20	$62.22	$0.019	$0.020	3.29	2.98	1.0	0.9
URBN	$36.88	$34.03	$0.014	$0.014	3.89	3.94	1.1	1.0
MYL	$47.49	$49.86	$0.017	$0.016	3.45	3.44	1.0	1.0
STX	$52.77	$58.66	$0.021	$0.021	3.98	3.59	0.9	0.9
GNTX	$30.97	$29.82	$0.017	$0.022	7.19	5.59	1.0	0.8
NXST	$42.86	$45.91	$0.069	$0.080	17.83	15.20	0.9	0.9
DTV	$71.61	$85.54	$0.019	$0.018	2.51	2.23	0.8	0.9
APOL	$29.99	$27.94	$0.018	$0.016	5.48	6.38	1.1	1.2
AMAT	$18.30	$21.78	$0.010	$0.010	5.57	4.54	0.8	0.8
ACAD	$23.89	$24.65	$0.034	$0.036	15.37	13.98	1.0	0.9
INTU	$75.18	$83.85	$0.025	$0.022	2.85	2.98	0.9	1.0
Average	$38.27	$40.62	$0.020	$0.021	6.53	5.90	1.0	0.9

Table 14: Time-weighted Consolidated Spread and VWAP Comparison of 2017-2018 Sample Treatment Securities

Symbol	Pre-VWAP	Post-VWAP	Pre-$ Spread	Post-$ Spread	Pre BP Spread	Post BP Spread	VWAP Pre/Post	BP Post/Pre
AMLP	$17.60	$10.71	$0.010	$0.010	6.00	9.12	1.6	1.5
CWB	$47.70	$50.95	$0.047	$0.012	9.93	2.44	0.9	0.2
ERY	$20.52	$16.71	$0.015	$0.020	7.41	9.11	1.2	1.2
FAS	$86.49	$55.47	$0.028	$0.030	3.28	4.91	1.6	1.5
FAZ	$21.99	$13.65	$0.010	$0.010	4.63	7.84	1.6	1.7
FDN	$58.60	$118.02	$0.033	$0.054	5.57	4.71	0.5	0.8
IAU	$12.28	$12.17	$0.010	$0.010	8.03	8.26	1.0	1.0
PCY	$27.36	$28.22	$0.014	$0.010	5.30	3.63	1.0	0.7
PGX	$13.84	$14.56	$0.011	$0.010	7.63	6.87	1.0	0.9
QID	$46.15	$22.89	$0.010	$0.011	4.02	5.57	2.0	1.4
SCO	$31.80	$26.84	$0.011	$0.021	3.46	7.13	1.2	2.1
SDOW	$31.18	$19.29	$0.012	$0.010	3.82	4.79	1.6	1.3
SDS	$30.24	$30.91	$0.010	$0.010	3.18	3.91	1.0	1.2
SH	$25.51	$30.62	$0.010	$0.010	4.00	3.23	0.8	0.8
SPXL	$61.03	$45.88	$0.018	$0.017	2.94	3.31	1.3	1.1
SPXS	$33.73	$25.13	$0.011	$0.011	3.28	4.82	1.3	1.5
SPXU	$39.97	$18.67	$0.011	$0.011	3.98	6.19	2.1	1.6
SQQQ	$44.98	$17.33	$0.012	$0.010	4.28	5.19	2.6	1.2
SRTY	$29.47	$35.26	$0.017	$0.020	6.88	6.10	0.8	0.9
SVXY	$77.59	$52.11	$0.043	$0.030	4.82	4.88	1.5	1.0
TQQQ	$72.25	$83.70	$0.026	$0.033	2.93	3.25	0.9	1.1
TVIX	$7.79	$16.46	$0.010	$0.019	13.18	11.29	0.5	0.9
TWM	$33.47	$18.88	$0.013	$0.010	5.28	5.60	1.8	1.1
UPRO	$92.31	$79.16	$0.027	$0.028	2.90	2.89	1.2	1.0
UVXY	$37.77	$18.41	$0.039	$0.014	7.71	7.45	2.1	1.0
Average	$40.06	$34.48	$0.018	$0.017	5.38	5.70	1.3	1.1

Control Securities								
Symbol	Pre-VWAP	Post-VWAP	Pre-$ Spread	Post-$ Spread	pre BP Spread	Post BP Spread	VWAP Pre/Post	BP Post/Pre
NWSA	$17.26	$14.01	$0.010	$0.010	6.05	7.44	1.2	1.2
AZPN	$42.03	$75.83	$0.045	$0.079	10.74	10.15	0.6	0.9
ROIC	$14.81	$18.86	$0.013	$0.011	9.01	5.95	0.8	0.7
EWW	$63.93	$48.92	$0.021	$0.011	3.32	2.13	1.3	0.6
EA	$25.51	$110.31	$0.011	$0.048	4.31	4.30	0.2	1.0
CTAS	$58.07	$157.83	$0.033	$0.118	5.74	7.36	0.4	1.3
ERIC	$12.43	$7.16	$0.010	$0.010	8.01	14.47	1.7	1.8
CPRT	$34.74	$48.06	$0.024	$0.024	6.74	5.18	0.7	0.8
PPC	$17.63	$23.54	$0.018	$0.016	10.15	6.88	0.7	0.7
NTAP	$39.63	$56.64	$0.011	$0.022	2.96	3.77	0.7	1.3
NDAQ	$37.66	$79.77	$0.017	$0.039	4.44	4.81	0.5	1.1
SEIC	$33.51	$60.02	$0.018	$0.048	5.37	7.94	0.6	1.5
FOXA	$32.83	$36.96	$0.010	$0.010	3.00	3.01	0.9	1.0
GT	$24.76	$28.90	$0.011	$0.012	4.46	4.11	0.9	0.9
CHRW	$55.89	$81.93	$0.017	$0.040	3.17	4.79	0.7	1.5
URBN	$36.88	$30.01	$0.014	$0.019	3.89	6.08	1.2	1.6
MYL	$47.49	$37.66	$0.016	$0.014	3.45	3.73	1.3	1.1
STX	$52.77	$44.67	$0.021	$0.017	3.98	3.71	1.2	0.9
GNTX	$30.97	$21.06	$0.022	$0.011	7.19	5.19	1.5	0.7
CHKP	$64.52	$105.34	$0.033	$0.056	5.10	5.26	0.6	1.0
BBBY	$68.83	$22.70	$0.020	$0.012	2.84	5.18	3.0	1.8
WEN	$8.91	$16.04	$0.010	$0.010	11.33	6.56	0.6	0.6
LKQ	$28.39	$32.51	$0.016	$0.014	5.39	4.08	0.9	0.8
INTU	$75.18	$165.86	$0.022	$0.089	2.85	5.11	0.5	1.8
YNDX	$33.26	$31.71	$0.022	$0.016	6.21	5.17	1.0	0.8
Average	$38.32	$54.25	$0.019	$0.030	5.59	5.69	0.9	1.1

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Tables 13 and 14 provide details of the changes in VWAPs, dollar-based and basis points-based spreads for both the early comparison period and the late comparison period. As shown by the last two columns in Table 13, there was virtually no difference in spreads or VWAPs both pre- and post-treatment during the early comparison period. However, in the case of the treated 2017–2018 study, when compared to November 2013–April 2014 pre-treatment period, there was an average price increase in control securities of 42%, compared to a drop of 14% for the treated stocks. This resulted in a small drop in dollar spreads and an increase in spreads in basis points for the treated stocks, while control stocks saw a small increase in percentage spreads and a larger rise in dollar spreads. Additionally, several of the treatment securities had average spreads during the pre-period near $0.01, the minimum, meaning a price drop was reflected solely in the spreads calculated in basis points and these stocks were tick-constrained.

In conclusion, the Exchange believes that the Program was a positive experiment in attracting retail order flow to a public exchange. The order flow the Program attracted to the Exchange provided tangible price improvement to retail investors through a competitive pricing process unavailable in non-exchange venues. As such, despite the low volumes, the Exchange believes that the Program satisfied the twin goals of attracting retail order flow to the Exchange and allowing such order flow to receive potential price improvement. Moreover, the Exchange believes that the data collected during the Program supports the conclusion that the Program's overall impact on market quality and structure was not negative. Although the results of the Program highlight the substantial advantages that broker-dealers retain when managing the benefits of retail order flow, the Exchange believes that the level of price improvement guaranteed by the Program justifies making the Program permanent. The Exchange accordingly believes that the pilot Program's rules, as amended, should be made permanent.

The Exchange notes that the proposed change is not otherwise intended to address any other issues and the Exchange is not aware of any problems that member organizations would have in complying with the proposed rule change.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the requirements of Section 6(b) of the

Act,[65] in general, and Section 6(b)(5) of the Act,[66] in particular, in that it is designed to remove impediments to and perfect the mechanism of a free and open market and a national market system, to promote just and equitable principles of trade, and, in general, to protect investors and the public interest and not to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange believes the proposal is consistent with these principles because it seeks to make permanent a pilot and associated rule changes that were previously approved by the Commission as a pilot for which the Exchange has subsequently provided data and analysis to the Commission, and that this data and analysis, as well as the further analysis in this filing, shows that the Program has operated as intended and is consistent with the Act. The Exchange also believes that the proposed rule change is consistent with these principles because it would increase competition among execution venues, encourage additional liquidity, and offer the potential for price improvement to retail investors. Furthermore, as noted, similar programs instituted by NYSE and Nasdaq BX have recently been approved by the Commission to operate on a permanent basis.[67] The Exchange believes that its analysis, as well as the analysis conducted by NYSE and Nasdaq BX in their proposals for permanent approval, show that retail price improvement programs do not negatively impact market structure, and can therefore provide benefits to retail investors without negatively impacting the broader market.

The Exchange also believes the proposed rule change is designed to facilitate transactions in securities and to remove impediments to, and perfect the mechanisms of, a free and open market and a national market system because making the Program permanent would attract retail order flow to a public exchange and allow such order flow to receive potential price improvement. The data provided by the Exchange to the Commission staff demonstrates that the Program provided tangible price improvement to retail investors through a competitive pricing process unavailable in non-exchange venues and otherwise had an insignificant impact on the marketplace. The Exchange believes that making the Program permanent would encourage the additional utilization of, and interaction with, the NYSE and provide retail customers with an additional venue for price discovery, liquidity, competitive quotes, and price improvement. For the same reasons, the Exchange believes that making the Program permanent would promote just and equitable principles of trade and remove impediments to and perfect the mechanism of a free and open market.

Additionally, the Exchange believes the proposed rule change is designed to facilitate transactions in securities and to remove impediments to, and perfect the mechanisms of, a free and open market and a national market system because the competition promoted by the Program facilitates the price discovery process and potentially generates additional investor interest in trading securities. Making the Program permanent will allow the Exchange to continue to provide the Program's benefits to retail investors on a permanent basis and maintain the improvements to public price discovery and the broader market structure. The data provided to the Commission demonstrates that the Program provided tangible price improvement and transparency to retail investors through a competitive pricing process.

For the reasons stated above, the Exchange believes that making the Program permanent would promote just and equitable principles of trade and remove impediments to and perfect the mechanism of a free and open market.

Finally, as described further below in the Exchange's statement regarding the burden on competition, the Exchange also believes that it is subject to significant competitive forces and it would increase competition among execution venues, encourage additional liquidity, and offer the potential for price improvement to retail investors.

For all of these reasons, the Exchange believes that the proposal is consistent with the Act.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will result in any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The Exchange believes that making the Program permanent would continue to promote competition for retail order flow among execution venues. The Exchange also believes that making the Program permanent will promote competition between execution venues operating their own retail liquidity programs, including competition between the Program and similar programs currently operated by NYSE and Nasdaq BX on a permanent basis pursuant to a recently approved rule changes. Such competition will lead to innovation within the marketplace, thereby increasing the quality of the national market system and allowing national securities exchanges to compete both with each other and with off-exchange venues for order flow. Such competition ultimately benefits investors, and in this case specifically retail investors by providing multiple potential trading venues for the execution of their order flow, consistent with the principles of Regulation NMS, which was premised on promoting fair competition among markets. Finally, the Exchange notes that it operates in a highly competitive market in which market participants can easily direct their orders to competing venues, including off-exchange venues. In such an environment, the Exchange must continually review, and consider adjusting the services it offers and the requirements it imposes to remain competitive with other U.S. equity exchanges.

For the reasons described above, the Exchange believes that the proposed rule change reflects this competitive environment.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were solicited or received with respect to the proposed rule change.

III. Discussion and Commission Findings

After careful review, the Commission finds that the Exchange's proposal, as modified by Amendment No.1, to make permanent the Retail Liquidity Program Pilot, Rule 7.44–E, is consistent with the requirements of the Exchange Act and the rules and regulations thereunder applicable to a national securities exchange.[68] In particular, the Commission finds that the proposed rule change, as modified by Amendment No. 1, is consistent with Sections 6(b)(5)[69] and 6(b)(8)[70] of the Exchange Act. Section 6(b)(5) of the Exchange Act requires that the rules of a national securities exchange be designed, among other things, to promote just and

[65] 15 U.S.C. 78f(b).

[66] 15 U.S.C. 78f(b)(5).

[67] *See* note 17, *supra.* As also noted above, the Commission also recently approved a third exchange's retail liquidity program that had not been previously approved on a pilot basis. *See* note 18, *supra.*

[68] In approving this proposed rule change, the Commission has considered the proposed rule's impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

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

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

equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, to protect investors and the public interest, and not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers. Section 6(b)(8) of the Exchange Act requires that the rules of a national securities exchange not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Exchange Act.

As noted above, the Commission approved the Program on a pilot basis to allow the Exchange and market participants to gain valuable practical experience with the Program during the pilot period, and to allow the Commission to determine whether modifications to the Program were necessary or appropriate prior to any Commission decision to approve the Program on a permanent basis.[71] As set forth in the RLP Approval Order, the Exchange agreed to provide the Commission with a significant amount of data to assist the Commission's evaluation of the Program prior to any permanent approval of the Program.[72] Specifically, the Exchange represented that it would ''produce data throughout the pilot, which will include statistics about participation, the frequency and level of price improvement provided by the Program, and any effects on the broader market structure.'' [73] The Commission expected the Exchange to monitor the scope and operation of the Program and study the data produced during that time with respect to such issues.[74]

Although the pilot period was originally scheduled to end on April 14, 2015, the Exchange filed to extend the operation of the pilot on several occasions.[75] The pilot is now set to expire on October 31, 2019, and the Exchange proposes to make the Program, Rule 7.44–E, permanent. In its proposal, as modified by Amendment No. 1, the Exchange provides data and analysis which it believes justifies permanent approval of the Program. More specifically, in both the Notice and Amendment No. 1, the Exchange provides data indicating that the Program has had low volume levels, but has provided tangible price improvement to retail investors while the Program's overall impact on market quality has not been negative.

To assess the Program's impact on market quality, the the Exchange undertook a DID stastical analysis. Using the methodology explained above, the Exchange produced DID analyses that the Commission believes are useful to assess the Program's impact on market quality, as measured by a variety of market quality statistics including: (1) Time-weighted NYSE Arca quoted spread in basis points; (2) time-weighted NYSE Arca quoted spread in dollars and cents; (3) time-weighted consolidated quoted spread in basis points; (4) time-weighted consolidated quoted spread in dollars and cents; (5) Trade Reporting Facilities (''TRF'') share of volume during regular trading hours, excluding auctions; (6) TRF share of volume, full day, including auctions; (7) NYSE Arca share of volume during regular trading hours, excluding auctions; (8) NYSE Arca share of volume, full day, including auctions; and (9) Trade-to-trade price changes in basis points. In its DID analyses, the Exchange studies stocks that had a CADV of at least 500,000 shares during both a pre-treatment period and a treatment period. For these stocks, the Exchange compares changes in market quality statistics between the pre-treatment period and treatment period for the treatment group and the control group stocks. The Exchange conducts this study using two different treatment periods: Examining market quality statistics for (i) the period November 2013–April 2013 compared to the period from June 2014–November 2014; and (ii) the period November 2013–April 2013, compared to the period 2017–2018.

During the first treatment period studied (June 2014–November 2014), the Exchange states that total price improvement provided to retail investors under the Program was $1.6 million. As shown in Table 10 above, for this period, the Exchange also finds that there were no statistically significant differences between treatment and control group stocks for changes in time-weighted NYSE Arca or time-weighted consolidated spreads.[76]

During the second treatment period studied (2017–2018), the Exchange states that total price improvement provided to retail investors under the Program was $6.2 million, with per share price improvement ranging from $0.0015 to $0.0055. With respect to the 2017–2018 treatment period, when comparing changes between the pre-treatment period and the 2017–2018 treatment period, the Exchange observes a slight increase in average spreads in basis points, both for the treatment and control securities, which could suggest a negative effect of the Program. The Exchange explains, however, that further analysis reveals that the treatment stocks for the 2017–2018 treatment period saw an average price increase in control securities of 42%, compared to an average drop of 14% for the treated stocks; the Exchange states that this resulted in small drop in dollar spreads and an increase in spreads in basis points for the treated stocks while the control stocks saw a small increase in percentage spreads and a larger rise in dollar spreads.

In Amendment No.1 the Exchange provides futher analysis regarding the above-mentioned increases in basis points spreads. The Exchange explains that while average spreads in basis points did increase slightly, the DID analysis resulted in a favorable regression for the treatment stocks compared to the control stocks. Referencing Table 14, the Exchange notes that dollar spreads for the treatment stocks fell from $0.018 to $0.017 as VWAP dropped to $34.48 from $40.05; control stock VWAPs rose to $4.25 from $38.32, which the Exchange believes caused dollar spreads to rise to $0.030 from $0.019. The Exchange further concludes that the

[71] *See* RLP Approval Order *supra* note 8, at 79529.

[72] *See* id.

[73] *See id.*

[74] *See id.*

[75] *See* Securities Exchange Act Release Nos. 87153 (September 30, 2019), 84 FR 53188 (October 4, 2019) (SR–NYSEArca–2019–67) (extending pilot to October 31, 2019); 86198 (June 26, 2019), 84 FR 31648 (July 2, 2019) (SR–NYSEArca–2019–45) (extending pilot to September 30, 2019); Securities Exchange Act Release No. 84773 (December 10, 2018), 83 FR 64419 (December 14, 2018) (SR–NYSEArca–2018–89) (extending pilot to June 30, 2019); Securities Exchange Act Release No. 83538 (June 28, 2018), 83 FR 31210 (July 3, 2018) (SR–NYSEArca–2018–46) (extending pilot to December 31, 2018); Securities Exchange Act Release No. 82289 (December 11, 2017), 82 FR 59677 (December 15, 2017) (SR–NYSEArca–2017–137) (extending pilot to June 30, 2018); Securities Exchange Act Release No. 80851 (June 2, 2017), 82 FR 26722 (June 8, 2017) (SR–NYSEArca–2017–63) (extending pilot to December 31, 2017); Securities Exchange Act Release No. 79495 (December 7, 2016), 81 FR 90033 (December 13, 2016) (SR–NYSEArca–2016–157) (extending pilot to June 30, 2017); Securities Exchange Act Release No. 78601 (August 17, 2016), 81 FR 57632 (August 23, 2016) (SR–NYSEArca–2016–113) (extending pilot to December 31, 2016) *as corrected by* Securities Exchange Act Release No. 78601 (August 17, 2016), 81 FR 63243 (September 14, 2016) (SR–NYSEArca–2016–113); Securities Exchange Act Release No. 77424 (March 23, 2016), 81 FR 17523 (March 29, 2016) (SR–NYSEArca–2016–47) (extending pilot to August 31, 2016); Securities Exchange Act Release No. 75994 (September 28, 2015), 80 FR 59834 (October 2, 2015) (SR–NYSEArca–2015–84) (extending pilot to March 31, 2016); and Securities Exchange Act Release No. 74572 (March 24, 2015), 80 FR 16705 (March 30, 2015) (SR–NYSEArca–2015–22) (extending pilot to September 30, 2015).

[76] The Exchange found that only one statistic—NYSE Arca Regular Hours Share, no auction—had a statistical significance; it showed that NYSE Arca market share increased during the treatment period.

increases in basis points spreads for the control stocks (5.59 to 5.69) and for the treatment stocks (5.70 versus 5.38) were due to stocks being tick constrained as prices fell during the treatment period. As such, the Exchange explains in Amendment No. 1 that the DID analysis shows better performance for treatment stocks than control group securities, in support of its conclusion that the Program has not had a negative impact on market quality.

After careful consideration, the Commission believes that the data and analyisis provided by the Exchange, including the results of the Exchange's DID analysis and additional analysis provided in Amendment No. 1, support the Exchange's conclusion that the Program provides tangible price improvement to retail investors on a regulated exchange venue and has not demonstrably caused harm to the broader market. Accordingly, the Commission finds that the proposed rule change, as modified by Amendment No. 1, is consistent with the requirements of the Exchange Act.

IV. Solicitation of Comments on Amendment No. 1

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether Amendment No. 1 to the proposed rule change is consistent with the Exchange Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–NYSEArca–2019–63 on the subject line.

Paper Comments

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

All submissions should refer to File Number SR–NYSEArca–2019–63. 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. The Commission will post all comments on the Commission's internet website (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be 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 10:00 a.m. and 3:00 p.m. Copies of this filing will also be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–NYSEArca–2019–63 and should be submitted on or before November 14, 2019.

V. Accelerated Approval of Proposed Rule Change, as Modified by Amendment No. 1

The Commission finds good cause to approve the proposed rule change, as modified by Amendment No. 1, prior to the 30th day after the date of publication of notice of Amendment No. 1 in the **Federal Register**. Amendment No. 1 supplements the proposal by providing additional data regarding retail price improvement provided by the Program and further analysis of the Program's impact on the broader market by expanding the Exchange's explanation of its DID analysis. Specifically, in Amendment No. 1, the Exchange represents that for the years 2017–2018, the Program provided retail investors with $6.2 million in price improvement. Additionally, as explained further in Section III above, the Exchange explains why despite slight increases in basis point spreads for the treatment group, the regression demonstrated in its DID analyses implicated better performance for treatment stocks than control group securities. Additionally, Amendment No. 1 provides two additional tables showing the time-weighted consolidated spreads and VWAP comparisons for the respective treatment and control securities from the years 2013–2014 and 2017–2018 samples. The additional information and analysis set forth in Amendment No. 1 assisted the Commission in evaluating the price improvement provided to retail investors by the Program and the Program's impact on the broader market. This in turn, enabled the Commission to determine that that permanent approval of the Program, Rule 7.44–E, is reasonably designed to perfect the mechanism of a free and open market and the national market system, protect investors and the public interest, and not be unfairly discriminatory, or impose an unnecessary or inappropriate burden on competition. Accordingly, pursuant to Section 19(b)(2) of the Exchange Act,[77] the Commission finds good cause to approve the proposed rule change, as modified by Amendment No. 1, on an accelerated basis.

VI. Limited Exemption from the Sub-Penny Rule

Pursuant to its authority under Rule 612(c) of Regulation NMS,[78] the Commission hereby grants the Exchange a limited exemption from the Sub-Penny Rule to operate the Program. For the reasons discussed below, the Commission determines that such action is necessary or appropriate in the public interest, and is consistent with the protection of investors.

When the Commission adopted the Sub-Penny Rule in 2005, the Commission identified a variety of problems caused by sub-pennies that the Sub-Penny Rule was designed to address:

- If investors' limit orders lose execution priority for a nominal amount, investors may over time decline to use them, thus depriving the markets of liquidity.
- When market participants can gain execution priority for a nominal amount, important customer protection rules such as exchange priority rules and the Manning Rule[79] could be undermined.
- Flickering quotations that can result from widespread sub-penny pricing could make it more difficult for broker-dealers to satisfy their best execution obligations and other regulatory responsibilities.
- Widespread sub-penny quoting could decrease market depth and lead to higher transaction costs.
- Decreasing depth at the inside could cause institutions to rely more on execution alternatives away from the exchanges, potentially increasing fragmentation in the securities markets.[80]

The Commission believes that the limited exemption granted today should continue to promote competition between exchanges and OTC market

[77] 15 U.S.C. 78s(b)(2).

[78] 17 CFR 242.612(c).

[79] *See* Financial Industry Regulatory Authority Rule 5320 (Prohibition Against Trading Ahead of Customer Orders).

[80] *See* Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496 (June 29, 2005).

makers in a manner that is reasonably designed to minimize the problems that the Commission identified when adopting the Sub-Penny Rule. Under the Program, sub-penny prices will not be disseminated through the consolidated quotation data stream, which should avoid quote flickering and its reduced depth at the inside quotation.

Furthermore, the Commission does not believe that granting this limited exemption and approving the proposal would reduce incentives for market participants to display limit orders. As noted in the RLP Approval Order, the vast majority of marketable retail orders were internalized by OTC market makers that offered sub-penny executions,[81] and, as noted in Notice, the Program has attracted a small volume of overall retail market share. As a result, enabling the Exchange to continue to compete for retail order flow through the Program should not materially detract from the current incentives to display limit orders, while potentially resulting in greater order interaction and price improvement for marketable retail orders on a public national securities exchange. To the extent that the Program may raise Manning and best execution issues for broker-dealers, these issues are already presented by the existing practices of OTC market makers.

This permanent and limited exemption from the Sub-Penny Rule is limited solely to the operation of the Program by the Exchange. This exemption does *not* extend beyond the scope of Exchange Rule 7.44–E. In addition, this exemption is conditioned on the Exchange continuing to conduct the Program, in accordance with Exchange Rule 7.44–E and substantially as described in the Exchange's request for exemptive relief and the proposed rule change.[82] Any changes in Exchange Rule 7.44–E may cause the Commission to reconsider this exemption.

VII. Conclusion

It is therefore ordered, pursuant to Section 19(b)(2) of the Exchange Act,[83] that the proposed rule change (SR–NYSEArca–2019–63), as modified by Amendment No. 1, be, and it hereby is, approved on an accelerated basis.

It is further ordered that, pursuant to Rule 612(c) under Regulation NMS, that the Exchange shall be exempt from Rule 612(a) of Regulation NMS with respect to the operation of the Program as set forth in Exchange Rule 7.44–E as described herein.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[84]

Eduardo A. Aleman,

Deputy Secretary.

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[81] *See* RLP Approval Order, *supra* note 8, at 79529.

[82] *See supra* note 7.

[83] 15 U.S.C. 78s(b)(2).

[84] 17 CFR 200.30–3(a)(12) and 17 CFR 200.30–3(a)(83).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–87358; File No. SR–NASDAQ–2019–085]

Self-Regulatory Organizations; The Nasdaq Stock Market LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Extend the Current Pilot Program Related to Nasdaq Rule 11890

October 18, 2019.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on October 15, 2019, The Nasdaq Stock Market LLC (''Nasdaq'' or ''Exchange'') filed with the Securities and Exchange Commission (''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to extend the current pilot program related to Nasdaq Rule 11890, Clearly Erroneous Transactions six months, to the close of business on April 20, 2020.

The text of the proposed rule change is available on the Exchange's website at *http://nasdaq.cchwallstreet.com,* at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of the proposed rule change is to extend the current pilot program related to Rule 11890, Clearly Erroneous Transactions, to the close of business on April 20, 2020. This change is being proposed to allow the Exchange to further consider a permanent proposal for clearly erroneous execution reviews.

On September 10, 2010, the Commission approved, on a pilot basis, changes to Rule 11890 that, among other things: (i) Provided for uniform treatment of clearly erroneous execution reviews in multi-stock events involving twenty or more securities; and (ii) reduced the ability of the Exchange to deviate from the objective standards set forth in the rule.[3] In 2013, the Exchange adopted a provision designed to address the operation of the Plan.[4] Finally, in 2014, the Exchange adopted two additional provisions providing that: (i) A series of transactions in a particular security on one or more trading days may be viewed as one event if all such transactions were effected based on the same fundamentally incorrect or grossly misinterpreted issuance information resulting in a severe valuation error for all such transactions; and (ii) in the event of any disruption or malfunction in the operation of the electronic communications and trading facilities of an Exchange, another SRO, or responsible single plan processor in connection with the transmittal or receipt of a trading halt, an Officer, acting on his or her own motion, shall nullify any transaction that occurs after a trading halt has been declared by the primary listing market for a security and before such trading halt has officially ended according to the primary listing market.[5] These changes are currently

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 62886 (September 10, 2010), 75 FR 56613 (September 16, 2010) (SR–NASDAQ–2010–076).

[4] *See* Securities Exchange Act Release No. 68819 (February 1, 2013), 78 FR 9438 (February 8, 2013) (SR–NASDAQ–2013–022).

[5] *See* Securities Exchange Act Release No. 72434 (June 19, 2014), 79 FR 36110 (June 25, 2014) (SR–NASDAQ–2014–044).