consistent with the protection of investors and the public interest, the proposed rule change has become effective pursuant to Section 19(b)(3)(A) of the Act [24] and Rule 19b–4(f)(6)(iii) thereunder.[25]

A proposed rule change filed under Rule 19b–4(f)(6) [26] normally does not become operative prior to 30 days after the date of the filing. However, pursuant to Rule 19b–4(f)(6)(iii),[27] the Commission may designate a shorter time if such action is consistent with the protection of investors and the public interest. The Exchange asked that the Commission waive the 30 day operative delay so that the proposal may become operative immediately upon filing. Extending the Pilot Rules' effectiveness to the close of business on April 18, 2022 will extend the protections provided by the Pilot Rules, which would otherwise expire in less than 30 days. Waiver of the operative delay would therefore permit uninterrupted continuation of the MWCB pilot while the Commission reviews the NYSE's proposed rule change to make the Pilot Rules permanent. Therefore, the Commission hereby waives the 30-day operative delay and designates the proposed rule change as operative upon filing.[28]

At any time within 60 days of the filing of such 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 under Section 19(b)(2)(B) [29] of the Act 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–NASDAQ–2022–026 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–NASDAQ–2022–026. 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–NASDAQ–2022–026 and should be submitted on or before April 12, 2022.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[30]

J. Matthew DeLesDernier,

Assistant Secretary.

[FR Doc. 2022–05983 Filed 3–21–22; 8:45 am]

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[24] 15 U.S.C. 78s(b)(3)(A)(iii).

[25] 17 CFR 240.19b–4(f)(6). In addition, Rule 19b–4 requires a self-regulatory organization to give the Commission written notice of its intent to file a proposed rule change under that subsection at least five business days prior to the date of filing, or such shorter time as designated by the Commission. The Commission has waived this requirement.

[26] 17 CFR 240.19b–4(f)(6).

[27] 17 CFR 240.19b–4(f)(6)(iii).

[28] 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).

[29] 15 U.S.C. 78s(b)(2)(B).

[30] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–94441; File No. SR–NYSE–2021–40]

Self-Regulatory Organizations; New York Stock Exchange LLC; Notice of Filing of Amendment No. 1 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment No. 1 To Adopt on a Permanent Basis the Pilot Program for Market-Wide Circuit Breakers in Rule 7.12

March 16, 2022.

I. Introduction

On July 2, 2021, New York Stock Exchange LLC (''NYSE'' or the ''Exchange'') filed with the Securities and Exchange Commission (''Commission'') pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the ''Act'') [1] and Rule 19b–4 thereunder,[2] a proposal to make its rules governing the operation of Market-Wide Circuit Breakers (''MWCB'') permanent. The proposed rule change was published for comment in the **Federal Register** on July 22, 2021.[3] On August 27, 2021, the Commission designated a longer period within which to either approve the proposed rule changes, disapprove the proposed rule changes, or institute proceedings to determine whether to disapprove the proposed changes.[4] On September 30, 2021, the Commission instituted proceedings to determine whether to approve or disapprove the proposed rule change.[5] On January 7, 2022, the Commission again designated a longer period within which to either approve the proposed rule changes, disapprove the proposed rule changes, or institute proceedings to determine whether to disapprove the proposed changes.[6] On February 28, 2022, the Exchange filed Amendment No. 1 to the proposed rule change.[7] The

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

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 92428 (July 16, 2021), 86 FR 38776 (SR–NYSE–2021–40) (''Notice'').

[4] See Securities Exchange Act Release No. 92785A, 86 FR 50202 (September 7, 2021).

[5] *See* Securities and Exchange Act Release No. 93212, 86 FR 50566 (October 5, 2021). The Commission instituted these proceedings to request comments regarding the Exchange's proposed testing requirement, which did not contemplate an ongoing assessment of whether the MWCB design remains appropriate over time, nor require the Exchange to participate in testing.

[6] *See* Securities Exchange Act Release No. 93933, 87 FR 2189 (January 13, 2022).

[7] In Amendment No. 1, the Exchange revised the proposal to: (1) Explain options market enhancements following the March 2020 MWCBs events to eliminate latency in their responses to

Commission has received no comments on the proposed rule change. The Commission is approving the proposed rule change, as modified by Amendment No. 1, on an accelerated basis.

II. Background

MWCBs are coordinated, cross-market trading halts designed to operate during extreme market-wide declines to provide opportunities for markets and market participants to assess market conditions and systemic stress. Each cash equity exchange and options exchange have rules that govern the operation of these MWCBs. The Commission first approved MWCB rules on a pilot basis in 1988 [8] following the market crash in October 1987.[9] These rules provided for a one-hour halt across all securities markets if the Dow Jones Industrial Average (''DJIA'') declined 250 points from the previous day's closing level and for a two-hour halt if the DJIA declined 400 points from the previous day's close.[10] The Commission approved amendments to MWCB rules in July 1996 to reduce the duration of the 250- and 400- point halts to 30 minutes and 60 minutes from one hour and two hours, respectively.[11] Subsequently, the Commission approved modifications to raise the point triggers to 350 points and 550 points in 1997.[12] In its order approving these changes, the Commission noted the importance of revisiting these triggers over time and stated that it would work with the markets and the Commodities and Futures Trading Commission (''CFTC'') to develop procedures for reevaluating the triggers on at least an annual basis.[13]

An MWCB was triggered for the first time on October 27, 1997, when the market dropped 350 points, representing a decline of 4.5%.[14] After a 30-minute halt, the market declined again, reaching the 550-point trigger, representing a total decline of 7%.[15] After studying the events of that day, the Commission approved revised MCWB rules on a pilot basis. These rules established trading halts following one-day declines in the DJIA of 10%, 20%, and 30%, rather than at specific point declines, to be calculated at the beginning of each calendar quarter using the average closing value of the DJIA for the previous month to establish specific point values for the quarter.[16] Under these revised MWCB rules, trading would halt for one hour if the DJIA declined 10% prior to 2:00 p.m., and for one-half hour if the DJIA declined 10% between 2:00 p.m. and 2:30 p.m.[17] If the DJIA declined by 10% at or after 2:30 p.m., trading would not halt at the 10% level.[18] If the DJIA declined 20% prior to 1:00 p.m., trading would halt for two hours; trading would halt for one hour if the DJIA declined 20% between 1:00 p.m. and 2:00 p.m., and for the remainder of the day if a 20% decline occurred at or after 2:00 p.m.[19] If the DJIA declined 30% at any time, trading will halt for the remainder of the day.[20]

On May 6, 2010, the markets sharply dropped 9%, but did not reach the 10% MWCB, before rebounding (the ''Flash Crash''). Following these events, in 2012 the Commission approved several modifications to MWCB rules (the ''Pilot Rules'') that were designed to make them more meaningful in high-speed, electronic trading environments.[21] The MWCB triggers were lowered to 7% (''Level 1''), 13% (''Level 2''), and 20% (''Level 3''); the DJIA was replaced with the S&P 500® Index (''S&P 500'') as the reference index; the recalculation of the values of the triggers was changed to daily instead of each calendar quarter; the length of the trading halts associated with each market decline level was shortened from 30 minutes to 15 minutes; and the times when a trading halt may be triggered were modified.[22] Specifically, these rules provided that if a Level 1 or Level 2 trigger was hit before 3:25 p.m., trading would halt for 15 minutes, and if a Level 1 or Level 2 trigger was hit at or after 3:25 p.m., trading would continue, unless a Level 3 trigger was hit.[23] If a Level 3 trigger was hit at any time, trading would halt for the rest of the day.[24]

The modified thresholds in the Pilot Rules were not triggered for the first time until March 2020 when MWCB Level 1 halts occurred on March 9, 12, 16, and 18, 2020.[25] In response to these events, a task force comprised of the SROs and industry participants [26] reviewed the events and concluded that the MWCBs had performed as expected and recommended that no changes be made to the MWCB rules.[27] In 2020, the SROs conducted a more complete study of the design and operation of the Pilot Rules and the National Market System (''NMS'') Plan to Address Extraordinary Market Volatility (''Limit Up-Limit Down'' or ''LULD'') during the period of volatility in the Spring of 2020. The SROs created an MWCB ''Working Group'' composed of SRO

MWCB halt messages; (2) reflect that the pilot period of the Rule 7.12 (MWCB Rule) expires on March 18, 2022; (3) require that the Exchange participate in all industry-wide tests of the MWCBs; (4) require members participating in MWCB tests to notify the Exchange of any inability to process messages relating to the MWCB test, records of which would be retained by the Exchange along with records of the Exchange's own participation in the test; (5) require the Exchange, along with the other SROs, to prepare and submit a report containing an analysis of any MWCB event and recommendations to the Commission within six months of a halt being triggered following a Level 1, Level 2, or Level 3 Market Decline; and (6) require the Exchange, together with the other SROs, to review the MWCB in the event of 5% market declines and any time an SRO makes changes to MWCB reopening processes, and provide a report to the Commission concerning such review should a modification to the MWCB be recommended. Amendment No. 1 is available on the Commission's website at *https://www.sec.gov/comments/sr-nyse-2021-40/srnyse202140.htm*.

[8] *See* Securities Exchange Act Release Nos. 26198 (October 19, 1988), 53 FR 41637 (October 24, 1988) (approving MWCB rules for Amex, CBOE, NASD, and NYSE); 26218 (October 26, 1988), 53 FR 44127 (November 1, 1988) (approving rules for CHX); 26357 (December 14, 1988), 53 FR 51182 (December 20, 1988) (approving rules for BSE); 26368 (December 16, 1988), 53 FR 51942 (December 23, 1988) (approving rules for PSE); 26386 (December 22, 1988), 53 FR 52904 (December 29, 1998) (approving rules for PHLX); and 26440 (January 10, 1989), 54 FR 1830 (January 17, 1989) (approving rules for CSE).

[9] The events of October 19, 1987 are described more fully in a report by the staff of the Commission's Division of Market Regulation. *See* ''The October 1987 Market Break, A Report by the Division of Market Regulation'' (February 1988).

[10] *See supra* note 8.

[11] *See* Securities Exchange Act Release Nos. 37457 (July 19, 1996), 61 FR 39176 (July 26, 1996) (SR–NYSE–96–09); 37458 (July 19, 1996), 61 FR 39167 (July 26, 1996) (SR–Amex–96–13); and 37459 (July 19, 1996), 61 FR 39172 (July 26, 1996) (SR–BSE–96–4; SR–CBOE–96–27; SR–CHX–96–20; SR–Phlx–96–12).

[12] *See* Securities Exchange Act Release No. 38221 (January 31, 1997), 62 FR 5871 (February 7, 1997).

[13] *See id.* at 5875.

[14] The events of October 27, 1997 are described more fully in a report by the staff of the Commission's Division of Market Regulation. *See* ''Trading Analysis Findings of October 27 and October 28, 1997'' (Sept. 1998), *available at https://www.sec.gov/news/studies/tradrep.htm#FOOTNOTE_24*.

[15] *See id.*

[16] *See* Securities Exchange Act Release No. 39846 (April 9, 1998), 63 FR 18477 (April 15, 1998), at 18478.

[17] *See id.*

[18] *See id.*

[19] *See id.*

[20] *See id.*

[21] *See* Securities Exchange Act Release No. 67090 (May 31, 2012), 77 FR 33531 (June 6, 2012).

[22] *See id.* at 33532.

[23] *See id.*

[24] *See id.*

[25] For a full description of the trading halts on March 9, 12, 14, and 16, *see* Notice at 38777–78.

[26] This task force was formed in late 2019, prior to the MWCB events in 2020, to evaluate the operation and design of the MWCB mechanism. *See* Securities Exchange Act Release No. 85560 (April 9, 2019), 84 FR 15247 (April 15, 2019) (SR–NYSE–2019–19). The task force made two recommendations after reviewing the MWCB events in 2020: (1) Futures markets should change the S&P 500 futures market volatility threshold from 5% to 7% to better align with the securities market MWCB Level 1 threshold of 7% and 2) futures markets should resume trading in S&P 500 futures contracts 5 minutes before end of MWCB halt. The futures markets have made changes to address these two recommendations, as discussed further below. *See supra* note 96.

[27] *See id.* at 38778.

representatives and industry advisers that included members of the advisory committees to both the LULD Plan and the NMS Plans governing the collection, consolidation, and dissemination of last-sale transaction reports and quotations in NMS Stocks. The Working Group prepared a study (the ''Study''),[28] which includes a timeline of the MWCB events in March 2020; a summary of the analysis and recommendations of the MWCB Task Force; an evaluation of the operation of the Pilot Rules during the March 2020 events; an evaluation of the design of the current MWCB system; and the Working Group's conclusions and recommendations.

III. Description of the Proposal, as Modified by Amendment No. 1

Based on the conclusions and recommendations reached by the Working Group after analyzing how the MWCBs performed in March 2020, the Exchange is proposing to transition the Pilot Rules [29] to operate on a permanent basis, as modified by Amendment No. 1.

IV. Discussion and Commission Findings

After careful consideration, the Commission finds that the Exchange's proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to national securities exchanges. In particular, the Commission finds that the Exchange's proposed rule change is consistent with Section 6(b)(5) of the Act,[30] which requires that the rules of an exchange be designed, among other things, to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in facilitating transactions in securities, and to remove impediments to and perfect the mechanism of a free and open market and a national market system.[31]

In its proposal to make the MWCB rules permanent in their current form, the Exchange considered whether the MWCBs functioned as designed, and whether the MWCBs calmed volatility without causing harm. The Exchange also examined the specific characteristics of the MWCBs: (1) Trigger levels; (2) trading halt times; and (3) use of the S&P 500 Index (''SPX'') as the reference for the MWCB mechanism. Further, the Exchange evaluated the impact of LULD Amendment 10 on the MWCB mechanism, whether changes should be made to MWCBs to prevent the market from halting shortly after the beginning of regular trading hours, and whether excessive LULD pauses should trigger a MWCB halt. Finally, the Exchange discussed the requirements for industry participants to test the operation of the MWCBs at least annually. Each of these elements are discussed in greater detail below.

A. MWCB Operation and Effect on Market Volatility

The Exchange finds that the MWCBs (1) operated as intended during the period in March considered in the Study [32] and (2) had the intended effect of calming volatility in the market without causing harm.[33] The Exchange considered the findings of the Study, including the effectiveness of communications instructing market participants to initiate an MWCB Halt, volatility and liquidity preceding and following the MWCB Halts, various measures of liquidity during MWCB Halts, and additional LULD halts following MWCB reopening auctions. As discussed further below, the Commission believes that the MWCBs operated as designed, appropriately halting trading and facilitating reopening auctions in NMS stocks. The Commission believes that the evidence, however, is not conclusive regarding the MWCB's effect on calming market volatility, although the Commission does believe that the MWCBs did not appear to harm the market.

1. MWCB Operated as Designed

On March 9, 12, 16, and 18, 2020, market conditions indicated that a Level 1 MWCB halt was likely to occur.[34] On each of these days, the Exchange activated an ''Intermarket Bridge'' call and sent an email alert to a pre-existing distribution list comprising multiple staff from securities and futures exchanges, FINRA, the Commission, the CFTC, the Depository Trust & Clearing Corporation, and the Options Clearing Corporation.[35] On each day when a Level 1 MWCB Halt was triggered, the call opened before the halt was triggered and remained open during the entire period of the halt, until trading in all symbols was reopened.[36] When SPX declined 7% from the previous day's closing value, breaching the MWCB Level 1 trigger, breach messages and regulatory halt messages were sent to relevant market participants.[37] Following these messages, all 9,000+ equity symbols were halted in a timely manner.[38] Further, approximately 900,000 options series were halted once regulatory halt messages were received by the options markets.[39] However, a relatively small number of options traded following the MWCB Halt messages.[40] Finally, on each of the four days where MWCB Halts were triggered, all SPX stocks reopened within 15 minutes of the end of the MWCB Halt.[41]

The Commission believes that the mechanism for communicating and initiating MWCB Halts worked as intended during March 2020. Prior to the triggering of the MWCB Halts, the SROs and industry members were actively monitoring market conditions in anticipation of an MWCB Halt. Before, during, and after the MWCB Halts occurred, the relevant SROs and regulators remained in communication about the implementation of an MWCB Halt and reopening. Additionally, all equity symbols subject to the MWCB were successfully halted in a timely manner, and while a small percentage of options continued trading during the MWCBs, the vast majority of affected options series halted following the initiation of the MWCBs. Furthermore, remedial steps have been taken by options exchanges to prevent trades from occurring following a future MWCB Halt.[42] Finally, all SPX symbols reopened within 15 minutes of the end of the MWCB Halts, and all securities had reopened within 30 minutes of the end of the MWCB Halt.[43]

[28] *See* ''Report of the Market-Wide Circuit Breaker (''MWCB'') Working Group Regarding the March 2020 MWCB Events,'' submitted March 31, 2021 (the ''Study''), attached hereto as Exhibit 3 [sic] and available at Exhibit 3 [sic] (sec.gov).

[29] NYSE Rule 7.12.

[30] 15 U.S.C. 78f(b)(5).

[31] 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). *See* also, supra Sections IV(A)(2)(f), IV(B), IV(C), and IV(D).

[32] *See* Notice, *supra* note 3, at 10.

[33] *See id.* at 12.

[34] *See id.* at 10.

[35] *See id.*

[36] *See id.*

[37] *See id.*

[38] *See id.*

[39] As noted by the Exchange, options markets are required to halt trading in options if there is an MWCB Halt in the cash equities market. *See* Study, *supra* note 27, at 3.

[40] Approximately 5,000 options trades that were sent to OPRA after the time of the four MWCB Halts were nullified. *See id.* Additionally, approximately 4,400 futures and options on futures traded for one minute following the initiation of the MWCB Halt. *See id.* at 11. The Exchange states that it understands that the Nasdaq options markets made a number of enhancements to internal systems to eliminate latency in the Nasdaq options markets' response to MWCB halt messages. *See* Amendment No. 1, *supra* note 7, at 3.

[41] *See* Notice, *supra* note 3, at 17.

[42] *See* Amendment No. 1, *supra* note 7, at 3.

[43] The MWCB Pilot Rules do not prescribe a time in which securities trading must resume following the halt. These rules require that trading halt for 15 minutes, after which exchanges may resume trading based on their rules governing reopening auctions

2. Effect of MWCB Halts on Volatility and Market Functioning

The Study evaluated the effects of the MWCB Halts in March 2020 on market volatility and functioning by examining various measurements of liquidity and volatility following each of the March 2020 MWCB Halts and comparing them to liquidity and volatility measurements of other trading periods.[44] In particular, the Study reviewed: (1) Activity before the opening of regular trading hours and the number of securities opening on a trade vs. opening on a quote; (2) size and liquidity in the opening auctions and post-MWCB halt reopening auctions; (3) quote volatility as measured by the median mid-point to mid-point price change every second in basis points; (4) liquidity at the national best bid and offer (''NBBO''); and (5) LULD Trading Pauses following MWCB reopening auctions.[45] The Exchange concludes that, based on the liquidity and volatility measures reviewed in the Study and discussed below, the MWCBs had the intended effect of calming volatility in the market, without causing harm.[46]

a. Activity Before the Opening of Regular Trading Hours and the Number of Securities Opening on a Trade vs. Opening on a Quote

The Study examined liquidity and volatility in the SPDR S&P 500 Trust ETF (''SPY'') prior to the market open on the four days where MWCB Halts occurred.[47] Generally, pre-market early morning trading activity is fairly limited. However, during the High-Volatility Period,[48] and particularly during the four days where an MWCB Halt was triggered, pre-market trading activity was significantly higher.[49] On the four MWCB Halt days, roughly five to nine times the number of shares traded in pre-market trading, relative to January 2020 levels.[50] Further, SPYs pre-market price range on those four days was up to ten times larger than what was typical in January 2020.[51] These levels indicate that markets were experiencing significant volatility prior to the MWCB being triggered.

The Study also reviewed whether there were any differences between the number of securities opened on a trade vs. opened on a quote during the four days with MWCB Halts.[52] The Study found that there was no meaningful difference in the percentage of securities opening on a trade versus quote during January 2020, MWCB Halt days, or the High-Volatility Period.[53] The one exception to this, however, was with respect to Tier 2 ETPs, which had a higher percentage of openings on a trade on each of the four MWCB Halt days than in January or during the High-Volatility Period.[54] Further, for most groups of securities, there was not a significant difference in the percentage of securities opening on a trade during reopening versus the open.[55] To the extent a difference did exist for certain classes of securities, this does not necessarily reflect inferior market function, as the reopening auctions examined were for securities that had opened prior to the MWCB Halts.[56] Therefore, the Study noted that it would expect there to be less interest represented in those reopening auctions.

b. Size and Liquidity of Opening and Reopening Auction

To assess the effect of MWCB Halts on available liquidity, the Study reviewed the liquidity available in the reopening auctions following an MWCB Halt and compared it to the average volume in opening auctions during other trading periods. The Study first compared (i) the median opening auction in share volume in January 2020, (ii) the median opening auction volumes in the High-Volatility Period, and (iii) the median volumes in shares traded in the reopening auctions following the MWCB Halts for symbols that had already executed opening auctions.[57] The Study found that given how many securities had already opened before the four MWCB Halts, the size of the reopening auctions were somewhat smaller than the opening auctions.

The Study also compared the size of the opening auctions plus reopening auctions following the MWCB Halts on the MWCB Halt days to the size of opening auctions in January 2020. The Study concluded that the MWCB Halts did not result in a loss of liquidity overall in the opening and reopening auctions. This was demonstrated, according to the Study, because the opening auction plus MWCB reopening auction volumes on the MWCB Halt days hewed closely to the January 2020 auction volumes.[58]

The Study also reviewed the March 16 MWCB Halt (which took place almost immediately upon the market open at 9:30:01 a.m.) and reopen.[59] The Study found that the size of the reopening auctions after the March 16 MWCB Halt were similar to opening auction volumes in January 2020.[60] This suggests, according to the Study, that MWCB Halts did not cause a significant deterioration in market liquidity.

The Study also assessed the nature of participation in reopening auctions. First, the Study assessed the participation of market makers in reopening auctions following MWCB Halts by reviewing principal versus agency activity in opening and MWCB reopening auctions.[61] In particular, the Study showed that the share of principal transactions in opening auctions on MWCB days was higher as compared to control periods.[62] Furthermore, the Study showed that while principal activity was lower in the MWCB reopening auctions, principal auction participation generally increased with each MWCB event.[63]

and trade resumption. See NYSE Rules 7.12 and 7.35A.

[44] *See Study, supra* note 27, at 12. The other trading periods include the month of January 2020 and the period from February 24 through May 1, 2020, excluding the four days with MWCB Halts (''High-Volatility Period'')

[45] *See id.*

[46] *See* Notice, *supra* note 3, at 12.

[47] *See* Study, *supra* note 27, at 13.

[48] Capitalized terms used but not defined herein have the meanings specified in the Study.

[49] *See* Study, *supra* note 27, at 13

[50] *See id.*

[51] *See id.*

[52] *See id.* at 14–15. The Exchange notes that it does not express any opinion about whether opening on a trade is preferable to opening on a quote.

[53] *See id.*

[54] *See id.*

[55] *See id.* The Commission notes that the Study does show a notable difference in the percentage of securities opening on a trade during the reopen versus the open for certain Tier 2 securities including ETPs and Non-ETPs. *See id.* at 14 (Chart 2, G4 and G5 graphs). However, as discussed in the Study, this does not necessarily reflect inferior market functioning. *See* Id.

[56] *See id.*

[57] *See id* at 15.

[58] *See id.* at 15–16. The Study notes that the March 18 MWCB event was excluded from this analysis since the MWCB Halt that day occurred midday rather than the early morning. *Id.*

[59] *See id.*

[60] The Study noted that when the March 16 Halt occurred, many securities had not yet started trading or quoting. Despite this, the size of the reopening auctions were similar to the opening auction volumes in January 2020. *See id.*

[61] *See id.* The Study noted that liquidity providers typically act as principal on such transactions and therefore principal trades are a proxy for trading by liquidity providers. *See id.* at 17. The Commission notes that the Study does not distinguish riskless principal trading by market makers and therefore some of the ''principal'' market maker interest may have represented as either retail or institutional customer interest. However, the Commission believes that this distinction does not significantly alter the broader analysis showing that the market appropriately reopened following each of the events, and market participants were able to resume trading in a normal fashion without apparent harmful impacts to either the auction processes or market liquidity.

[62] *See id.* at 17–18.

[63] *See id.*

Second, the Study looked at the top five market participants by volume during January 2020 and reviewed their involvement in MWCB reopening auctions.[64] The Study found that, compared to January 2020, their share of transactions in reopening auctions was higher than their share of opening auctions on days where an MWCB Halt was triggered.[65] According to the Study, these results suggest that the most active market participants were important providers of liquidity in the MWCB reopening auctions.[66]

c. Quote Volatility

The Study also reviewed the volatility of quoted equity prices before and after MWCB Halts were initiated as another method of testing the effects of MWCB Halts on liquidity and volatility.[67] As discussed above, following an MWCB Halt, if MWCBs perform as intended, volatility should decline as markets and market participants have the opportunity to assess market conditions and systemic stress. The Study concluded that MWCB Halts performed in this manner.

The Study reviewed the median second-to-second quote volatility before and after the MWCB Halts, as well as second-to-second quote volatility during January 2020 and the High-Volatility Period.[68] The Study stated that although second-to-second quote volatility was higher on the four MWCB days as compared to during January 2020 and the High-Volatility Period, volatility fell or stabilized following MWCB Halts.[69] Further, The Study concluded that during the four days where an MWCB was triggered, volatility fell to a level similar with the High-Volatility Period.[70] For Tier 1 and Tier 2 ETPs, volatility fell further and stabilized near January 2020 levels, although the Study recognized brief spikes in volatility midday on March 12 and March 18.[71] The Study asserted that market stabilization may be an indication that the MWCB Halts helped to calm the market, since volatility did not continue to escalate throughout the day.[72]

d. Liquidity at the NBBO

The Working Group also examined the intraday median quoted size (*i.e.,* number of shares) at the NBBO on days when MWCB Halts were triggered to understand the impact of the MWCB Halts on liquidity.[73] Specifically, the Study looked at two time periods: (1) 9:30 a.m.–9:34 a.m. and (2) 12:50 p.m.–12:55 p.m. Generally, when compared to January 2020 and the High-Volatility Period, the median size at the NBBO in the 9:30 a.m.–9:34 a.m. was smaller on days where an MWCB Halt was triggered.[74] However, on the three days with early morning MWCB Halts, many stocks did not open at 9:30 a.m. and many stocks also did not open on primary exchanges until after trading resumed following MWCB Halts, possibly explaining the relatively small size at the median NBBO.[75] Further, on March 18, when there was no early morning MWCB Halt and the only MWCB Halt took place in the afternoon, early morning liquidity was similar to the High-Volatility Period, and liquidity during the 12:50 p.m.–12:55 p.m. period was similar to January 2020 levels in most groups of securities.[76]

e. LULD Trading Pauses Following MWCB Reopening Auctions

Finally, the Study reviewed the number of LULD pauses following reopenings after MWCB Halts.[77] A significant increase in the number of LULD pauses may suggest that MWCBs did not serve their purpose of reducing volatility, or that adjustments need to be made to the reopening process, according to the Study.[78] A large number of LULD pauses may also suggest that reopenings occurred too quickly and the market did not have sufficient time to reprice.[79] The Study also distinguished limit up and limit down LULD pauses.[80] Generally, there were more limit up LULD pauses than limit down following MWCB reopening auctions.[81] This result is unsurprising as markets bounced back following large drops at the open, according to the Study.[82]

Having reviewed the findings of the Study, the Exchange concludes that the MWCB Halts triggered in March 2020 appeared to have the intended effect of calming volatility.[83] Specifically the Exchange found that (i) there was not a significant difference in the percentage of securities opening on a trade vs. quote during the MWCB days versus other periods reviewed; (ii) the size of MWCB reopening plus the initial opening for those days were on average equal to opening auction sizes during January 2020; (iii) securities in SPX opened relatively quickly following the MWCB Halt; (iv) volatility stabilized following MWCB Halt days and reached levels similar to other periods studied; and (v) the LULD mechanisms following MWCB Halts worked as designed to address intra-day volatility.[84] Based on the Exchange's conclusion that the MWCBs worked as intended, and calmed volatility without causing harm, it is proposing to make the MWCB rules permanent, as modified by Amendment No. 1. The MWCB rules include three main operational components, the trigger levels, halt times, and reference value, and a testing requirement. The Exchange addressed each of these in its proposed rule change, discussed further below.

f. Commission Assessment of MWCB Effect on Market Volatility and Market Functioning

While the Commission believes that the mechanism for communicating and initiating MWCB Halts and resumption of trading worked as intended during March 2020 as discussed above, we believe the evidence is less conclusive regarding the MWCB's effect on calming market volatility. For example, the Commission believes that the analysis regarding quote volatility is inconclusive. First, because three events occurred at the beginning of the trading day, the Study could not compare U.S. equity quote volatility before and after the MWCB event; rather it could only describe quote volatility after the MWCB event. Second, while the Study's analysis shows quote volatility decreasing following the MWCB halts, it does not necessarily lead to the conclusion that the MWCB halts caused

[64] *See id.*

[65] *See id.*

[66] The Commission notes, however, that it is not clear from the Study whether the reopening liquidity represented by the top five firms was due to their principal trading interest or agency customer orders (whether retail or institutional) routed to participate in the reopening auctions. However, the Commission believes that this distinction does not significantly alter the broader analysis showing that the market appropriately reopened following each of the events, and market participants were able to resume trading in a normal fashion without apparent harmful impacts to either the auction processes or market liquidity.

[67] *See id* at 22.

[68] *See id.*

[69] *See id.*

[70] *See id* at 23.

[71] *See id.*

[72] *See id.*

[73] *See id* at 25.

[74] *See id.* The Commission notes, however, that the Study shows that for G1 securities, median size at the NBBO was larger on March 9 than both January 2020 and the High-Volatility Period. G2 securities median size at the NBBO on March 12 was higher than the January period but lower than the High-Volatility Period. *See id.*

[75] *See id.*

[76] *See id.*

[77] *See id* at 20.

[78] *See id.*

[79] *See id.*

[80] *See id.*

[81] The March 18 MWCB reopening auction was the one exception to this trend, where the levels of limit up and limit down LULD pauses were similar. *See id.*

[82] *See id.*

[83] *See id.* at 22.

[84] *See id.* at 23.

quote volatility to decrease. Indeed, the quote volatility metrics described in the study are broadly consistent with the natural and well-known volatility dynamic in the U.S. equity market where volatility tends to be highest at the beginning of the trading day, decreases as the trading day progresses, and then increases again as the trading day approaches the close.[85] Third, the Study does describe some volatility analysis that shows volatility increasing for some stocks after some of the MWCB events and market reopenings, although again, it is not clear whether that volatility increase was caused by the MWCB.[86] The analysis is complicated further by the fact that three of the MWCB events in March occurred at the beginning of the trading day, preventing any comparison of the volatility of securities trading before the MWCB event with volatility after the MWCB event.[87]

Based on information available to analyze the MWCB's impact on market volatility, the Commission believes that the evidence provided in the Study generally indicates that the MWCB did not cause harm to the market. One concern with the three MWCB events occurring at the open of the trading day was that it could harm the opening process for equity securities, for example. The Study provides evidence that the size of the opening and MWCB reopening auctions, in tandem, was similar in size to the opening auction in other time periods considered.[88] Furthermore, on each of the four MWCB event days, the Study showed that there was no meaningful difference in the percentage of securities opening on a trade versus opening on a quote, with the exception of Tier 2 ETPs, which had a higher percentage opening on a trade on each of those days.[89] The Study's look at liquidity by measuring size at the NBBO does not present evidence which indicates the MWCB Halts had a significant impact on the liquidity available at the NBBO. While the Study showed that there was less size at the NBBO on the three MWCB event days that occurred at the beginning of the trading day, that result is not surprising given many stocks did not open until trading resumed after the MWCB reopening.[90] Additionally, the Study's observation of a drop in size at the NBBO around 1:30 p.m. for G4 and G5 securities on March 18 is not particularly concerning, given that by 2 p.m. size at the NBBO in these securities were back to normal.[91] Finally, the March 18 event analysis shows that on the day the MWCB was triggered in the middle of the trading day, size at the NBBO leading up to the MWCB event was similar to January 2020 levels and was slightly larger for non-ETPs when compared to the remainder of the High-Volatility Period.[92]

In sum, the Commission believes that the MWCB operated appropriately as designed. While the MWCB impact on volatility is inconclusive, evidence shows that the MWCB effectively halted the market after the Level 1 threshold was reached on each of the four days in March 2020. The market appropriately reopened following each of the events, and market participants were able to resume trading in a normal fashion without apparent harmful impacts to either the auction processes or market liquidity. It is also notable that while the Pilot Rules approved in 2012 had never previously been triggered, the four events in March 2020 have provided market participants with significant experience with the current MWCB design. This familiarity with how the mechanism operates should further support a fair and orderly market function in the event of a future MWCB halt.[93] Finally, the Exchange's proposed testing provisions, along with the provisions requiring an analysis and report to the Commission should future MWCB events occur and a commitment to review the MWCB in the event of 5% market declines and changes to MWCB reopening processes, will help ensure that the MWCB design remains appropriate as market conditions and structure change over time. For these reasons, the Commission finds that the Exchange's proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to national securities exchanges. In particular, the Commission finds that the Exchange's proposed rule change is consistent with Section 6(b)(5) of the Act,[94] which requires that the rules of an exchange be designed, among other things, to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in facilitating transactions in securities, and to remove impediments to and perfect the mechanism of a free and open market and a national market system. The Commission discusses below each of the key elements of the MWCB in more detail.

B. MWCB Threshold Levels

Under the Pilot Rules, a market-wide trading halt will be triggered if SPX declines in price by specified percentages from the prior day's closing price of that index. The triggers are set at three circuit breaker thresholds: 7% (Level 1), 13% (Level 2), and 20% (Level 3).[95] Based on the analysis of these levels, the Exchange is proposing to make this aspect of the MWCB rules permanent.[96] In conducting its Study following the March 2020 MWCB trading halts, the Working Group examined historical data on large-scale market declines. It also considered the recommendation of the Equity Market Structure Advisory Committee's (''EMSAC'') Subcommittee on Market Quality from 2016 suggesting that the Level 1 trigger should be adjusted to 10% based on evidence from the Chinese markets that indicated that when markets began to approach a 7% band, selling pressure increase as market participants tried to complete trades before trading halted.[97]

The Study observed that since 1962, intraday losses as large as 7% in SPX have occurred only 16 times, and that the four times that such losses did occur since the implementation of the LULD Plan were the four dates in March 2020

[85] *See, e.g.,* Robert A. Wood, Thomas H. McInish, and J. Keith Ord., ''Investigation of Transactions Data for NYSE Stocks,'' 40 *The Journal of Finance* (1985).

[86] *See* Study, *supra* note 27, at 23–25. For example, when comparing Charts 8 and 10 of the Study, volatility appears to increase for Tier 2 securities after the three morning MWCB Halts when compared to the 9:30–9:35 a.m. periods. Additionally, after the midday March 18 MWCB Halt, it appears from Chart 9 of the Study that volatility rose in some securities. *Id.* We note, however, that the Study does not demonstrate a causal link between the MWCB Halts and the volatility increases in these instances.

[87] The Commission recognizes the challenges in empirically demonstrating a statistically significant causal relationship between MWCBs and volatility because MWCBs are rare events that occur during times of heightened volatility.

[88] *See id.* at 16.

[89] *See id.* at 14.

[90] *See id.* at 25.

[91] *See id.* at 25–27.

[92] *See id.*

[93] *See id.* at 18–21 (showing some evidence of increasing principal participation with each MWCB event).

[94] 15 U.S.C. 78f(b)(5).

[95] *See* NYSE Rule 7.12(a)(i)–(iii).

[96] *See* Notice, *supra* note 3, at 38778. The Exchange also noted that the Chicago Mercantile Exchange (''CME'') considered whether changes could be made to better align the cash and futures market. *See* Study, *supra* note 27, at 7. Specifically, CME considered whether the futures limit-down percentage should be widened to 7% from a 5% level. Id. Ultimately, on October 12, 2020, CME decided to implement a 7% price limit for overnight trading hours in certain futures and options on futures. *See* CME Submission No. 20–392, dated September 25, 2020.

[97] *See* EMSAC Recommendations for Rulemaking on Issues of Market Quality, July 25, 2016, *available at https://www.sec.gov/spotlight/emsac/emsac-market-quality-subcommittee-recomendation-072516.pdf.*

that triggered the MWCB Halts.[98] The Study further noted that since the LULD Plan was implemented, there have been only five days where SPX fell as much as 6%, and all took place during the March 9–March 18, 2020 time period.[99] The Study observed that on March 11, 2020 the index fell as much as 6.07%, but did not continue lower to trigger a Level 1 MWCB halt at 7%.[100] On March 16, 2020, SPX declined enough to trigger a Level 1 halt, and continued to fall after reopening down 12.18%, but did not fall to the 13% trigger for a Level 2 halt, according to the Study.[101] The Study also noted that on March 9, 12, and 18, 2020, SPX also declined further after the Level 1 halt, with intraday lows of –8.01%, –9.58%, and –9.83%.[102] The Study concluded that the fact that SPX continued to decline after the halt at 7% suggests that ''the market found an equilibrium level that was not particularly tied to the 7% Level 1 trigger or the 13% Level 2 trigger.'' [103] The Study further concluded that the available evidence supports a conclusion that the current 7% and 13% triggers did not create a ''magnet effect.'' [104] The Exchange has represented that it agrees with this analysis and therefore is proposing that the MWCB trigger levels be permanently approved without change.[105]

The Commission believes that the Level 1 (7%), Level 2 (13%), and Level 3 (20%) thresholds are appropriate levels of market decline at which the MWCB halts are triggered. The Commission has reviewed the levels at which the MWCBs are triggered on several occasions following sharp declines in the markets and has made adjustments over the last three decades to ensure the thresholds remain meaningful as the markets evolve. The initial MWCB rules, approved in 1988, established thresholds based on DJIA point values of 250 and 400, which at the time represented market declines of 12% and 19%, respectively.[106] Years later, it became clear that the thresholds needed to be updated to keep up with changes in the market. Stock prices had risen substantially since the MWCBs were first approved, such that by July 1996, a 250-point decline and a 400-point decline, represented declines of the DJIA of only 4.5% and 7%, respectively.[107] In 1997, the Commission approved proposals to increase the thresholds to 350 points and 550 points.[108] After the MWCB halts were triggered in October 1997, the industry concluded that the thresholds were too low, as they were triggered at declines of only 4.54% and 7.18%, which the industry believed did not justify halts in trading.[109] The Commission subsequently approved modifications to base the thresholds on a percentage of market decline instead of a point decline and set them at 10%, 20% and 30%.[110] The market sharply declined 9% in the Flash Crash on May 6, 2010, which was not enough to trigger a Level 1 MWCB halt. Amidst concerns that events such as the Flash Crash could seriously undermine the integrity of the U.S. securities markets, in 2012, as discussed above, the Commission again approved modification to the thresholds, and lowered the Level 1 and Level 2 thresholds to 7% and 13%, respectively.[111]

The MWCB thresholds set in 2012 have been in place on a pilot basis since their approval and were not reached until the market declines experienced in March 2020.[112] Over the last 18 months, the SROs, Industry Members, and the Commission have had an opportunity to study data from these events and consider whether the current trigger levels are appropriately set. The Commission believes that data and analysis in the Study, in addition to the lessons learned since the original implementation of circuit breakers in 1988, support a conclusion that the current MWCB threshold levels represent appropriate levels of decline in NMS stocks that warrant a temporary halt, in the case of a Level 1 and Level 2 decline, or a halt for the remainder of the day, in the event of a Level 3. Furthermore, as discussed above, the Exchange's proposed testing provisions, along with the provisions requiring an analysis and report to the Commission should future MWCB events occur and a commitment to review the MWCB in the event of 5% market declines and changes to MWCB reopening processes, will help ensure that the MWCB design remains appropriate as market conditions and structure change over time.

C. Trading Halt Times

The Pilot Rules provide that in the event an MWCB Level 1 or Level 2 halt is triggered after 9:30 a.m. but before 3:25 p.m., trading will halt for 15 minutes. If the threshold for a Level 1 or Level 2 MWCB halt is triggered after 3:25 p.m., trading will continue unless a Level 3 halt is triggered.[113] If the threshold to trigger a Level 3 MWCB is reached at any time, trading will halt for the remainder of the day.[114] The Exchange has represented that it agrees with the conclusion in the Study that a 15-minute trading halt following a Level 1 or Level 2 MWCB is appropriate, and is proposing to make this aspect of the Pilot Rules permanent, along with the provision that provides that trading will halt for the remainder of the day following a Level 3 circuit breaker.[115]

In reaching its conclusion, the Study noted that in October 2020, CME implemented a change to reopen the E-mini S&P 500 futures five minutes before the end of a 15-minute Level 1 or Level 2 MWCB halt, in order to enhance the equity market price discovery process leading into an MWCB reopening auction process, which begin after the end of the 15-minute MWCB halts.[116] The Study noted, however, that a similar change to the length of the Level 1 and 2 MWCB Halts was unnecessary, and recommended the 15-minute length of the Level 1 and Level 2 MWCB halts be approved on a permanent basis without change.[117]

The Commission believes that a trading halt of 15 minutes following a triggering of a Level 1 or Level 2 MWCB halt between 9:30–3:25 p.m. is appropriate to allow market participants

[98] *See* Study, *supra* note 27, at 38.

[99] *See id.*

[100] *See id.*

[101] *See id.*

[102] *See id.*

[103] *Id.*

[104] *Id.* The Study did not draw any conclusions about whether a ''magnet effect'' exists when market declines approach 20% (the Level 3 MWCB trigger that would end trading for the remainder of the day), given the lack of data. *See id.*

[105] *See* Notice, *supra* note 3, at 38782.

[106] *See supra* note 6.

[107] *See* ''Trading Analysis of October 27 and 28, 1997,'' A Report by the Division of Market Regulation U.S. Securities and Exchange Commission, dated September 1998, *available at https://www.sec.gov/news/studies/tradrep.htm#cbs* (''1997 Trading Analysis'').

[108] *See supra,* note 10.

[109] *See* 1997 Trading Report, *supra* note 118.

[110] *See supra* note 14.

[111] *See supra* note 19.

[112] *See* Notice, *supra* note 3, at 38777–78.

[113] *See* NYSE Rule 7.12(b).

[114] *See id.*

[115] *See* Notice, *supra* note 3, at 38783–84. The Exchange also proposed no changes be made to the MWCB to prevent the market from halting shortly after the open of regular trading at 9:30 a.m., despite the three MWCB events that occurred near the open of regular trading. *See* Study, *supra* note 27, at 2. As noted in the Study, after considering this potential change, it was determined that (1) there was no simple way to design an alternative that would prevent a halt at the open, (2) the markets should be protected at the open in any event, as it tends to be the most volatile period of the trading day and different future scenarios such as breaking news at the open would merit a halt, (3) market participants are now accustomed to how the MWCBs operate at the open of regular trading, and (4) the MWCB Halts at the open of regular trading did not harm the market functioning, including the conduct of opening and reopening auctions. *See* Study, *supra* note 27, at 43–44.

[116] *See* Study, *supra* note 25, at 38.

[117] *See id.*

to assess the state of the market. Regarding the application of MWCB shortly after the open of regular trading, the Commission agrees that on balance it remains appropriate. In particular, the Commission believes that the MWCB protections are an important protection at the beginning of regular trading. Furthermore, as discussed above, the Commission believes that the Study provides evidence that the three MWCB events at or near the open of regular trading did not cause harm to the market, including the conduct of the opening and reopening auctions.[118] Finally, market participants now have substantial experience with how the MWCB operates at or near the open of regular trading, and any changes to the MWCB at the time of day would introduce new uncertainty that is not necessary at this time, given the benefit of opening protections and the market's experience thus far. Additionally, the Commission believes that the CME's modification to resume trading in the E-mini S&P 500 futures should further improve the function of the MWCB, as market participants will have a better sense of market valuations leading into the MWCB reopening auction for equity securities. The Commission further believes that permitting trading to continue after 3:25 p.m. despite a decline in the markets, unless a Level 3 MWCB threshold is reached remains appropriate as this will help ensure a fair and orderly closing at 4 p.m. Finally, the declines in SPX in March 2020 did not approach the 20% threshold for triggering a Level 3 MWCB halt. Therefore, there is no data available to analyze how the markets would respond in the event SPX drops 20% and markets close for the day. The Commission believes, however, that any disruption in the markets that would cause a 20% decline in SPX would require market participants to make significant adjustments to their trading strategies, and thus halting trading for the remainder of the day is appropriate in such a situation. Furthermore, as discussed above, the Exchange's proposed testing provisions, along with the provisions requiring an analysis and report to the Commission should future MWCB events occur and a commitment to review the MWCB in the event of 5% market declines and changes to MWCB reopening processes, will help ensure that the MWCB design remains appropriate as market conditions and structure change over time.

D. SPX as Reference Value [119]

The Pilot Rules provide that SPX shall be used as the reference value for determining any percentage decline in the markets.[120] Based on the conclusion in the Study that SPX is the best measure for this purpose, the Exchange is proposing that the Pilot Rule designating SPX as the reference value be approved on a permanent basis.[121]

In analyzing whether to retain SPX as the reference for triggering MWCB halts, the Study examined criteria for considering an instrument or methodology to replace SPX and compared a number of potential alternatives to SPX. The Study considered the DJIA, S&P 100, Nasdaq 100, Russell 1000, Russell 3000, Wilshire 5000, E-Mini S&P 500 Futures, Exchange Trading Products-related SPX (*i.e.,* SPY, IVV, VOO) as potential alternatives to SPX and for each alternative considered: The breath of securities in an index or an index or in the index underlying a specific product; breadth of sectors represented by product/index; breadth of listing exchanges represented by product/index; correlation with related products, including derivatives and ETPs; does the reference value demonstrate dislocations from the underlying value; industry awareness of the index/product level; activity level in/liquidity generally present in the product (or correlated products if reference value is an index); if reference value is a traded product, susceptibility of that product to short term liquidity imbalances that might erroneously trigger an MWCB; potential concerns regarding cross-market coordination; whose regulatory purview does the reference value fall under; reference calculation method; and the index methodology.[122]

The Study reflected the view of industry practitioners that it is important that the reference price be based an index rather than an individual tradable product because individual product are vulnerable to temporary order imbalances or price shocks, which may result in transient premiums or discounts.[123] In addition, the Study considered that individual products may be subject to single stock price bands or circuit breakers, but an index has less potential to be influenced by these factors than an individual product.[124]

Of the indices the Study examined, it found that SPX contains a large number of securities with a high degree of breadth, an extremely high correlation with the liquidity of its underlying securities, and a well-understood calculation methodology. S&P DJI disseminates documentation regarding the calculation of SPX, especially at and around market open and reopen that addresses technical questions regarding the index calculation and value dissemination.[125]

Based on the Study's review of the potential alternatives to SPX and the Exchange's own observations of the product, the Exchange believes that SPX is an appropriate product to use as the reference for the MWCB mechanism, and is proposing to make this aspect of the Pilot Rules permanent without change.[126] The Exchange acknowledges that non-traded products are not subject to regulatory oversight, but due to the safeguards provided by S&P DJI the Exchange nevertheless believes that SPX is an appropriate reference.[127] In particular, the Exchange notes that S&P DJI periodically improves its calculation methods for SPX.[128] The Exchange also considered that S&P DJI was forthcoming and transparent in responding to the Working Group's questions about the resiliency and redundancy of the SPX calculation.[129] In meetings with the Working Group, S&P DJI explained that three geographically disperse data centers independently calculate the SPX, and S&P DJI monitors for consistency of values.[130] The Exchange also considered however that, while S&P DJI's index computations are conducted and made available from three geographic locations with delivery through separate communications lines, there is no completely independent backup maintained for SPX, which remains a

[118] *See supra* Section IV(2)(f).

[119] The Exchange also considered the question of whether or not the MWCB should be triggered if there is a sufficient number of LULD price limits triggered. See Study, supra note 25, at 44. According to the Study, the LULD trading pause data prior to the MWCB Halts did not shed light on this question, as the March MWCB Halts were proceeded by very few LULD Halts. While the MWCB Halts did not provide evidence in support of this alternative MWCB trigger, the Exchange and the Study note that future events may merit looking at this potential modification again. See Study, supra note 25, at 44.

[120] *See* NYSE Rule 7.12(a)(i).

[121] *See* Notice, *supra* note 3, at 38784–85.

[122] *See* Study, *supra* note 27, at 39–40.

[123] *See id.* at 40–41.

[124] *See id.* at 41.

[125] *See id.* at 41.

[126] *See* Notice, *supra* note 3, at 38785.

[127] *See id.*

[128] *See id.* at 38784–5. For example, following the events of August 24, 2015, S&P DJI changed its methodology for calculating SPX to use consolidates prices. The Exchange believes that this change likely helped to ensure that SPX accurately reflected market conditions preceding the MWCB Halts in March 2020. *See id.*

[129] *See id.* at 38785.

[130] *See id.*

single point of failure.[131] S&P DJI addressed this concern by explaining that it intends to establish an independent index calculation to be conducted and maintained by a separate, independent entity to further reinforce redundancy and resiliency of the calculation.[132]

The Commission believes that SPX is the best reference for gauging a decline in the markets overall. The Commission agrees that at this time an index is a more reliable reference than a single tradable product as it is not subject to same degree of temporary volatility or liquidity gaps and remains more in-line with a large number of products. Additionally, SPX's number and breadth of securities, high correlation to those underlying securities, and its well-understood calculation methodology makes it an appropriate benchmark for the MWCB. The SPX calculation is performed at separate, geographically diverse locations to help ensure the integrity of the index calculation. Further, as noted by the Exchange, S&P DJI has been transparent and responsive to the Exchange and the other Working Group members about the calculation of SPX, and has committed to further enhance the redundancy and resiliency of the SPX calculation by establishing an independent index calculation to be conducted and maintained by a separate, independent entity.[133] Finally, as discussed above, the Exchange's proposed testing provisions, along with the provisions requiring an analysis and report to the Commission should future MWCB events occur and a commitment to review the MWCB in the event of 5% market declines and changes to MWCB reopening processes, will help ensure that the MWCB design remain appropriate as market conditions and structure change over time

E. Testing Requirement

The Exchange's Rules require that the Exchange participate in all industry wide tests of the MWCB Mechanism. Further, the Rules also provide that all designated Regulation SCI firms participate in at least one MWCB test each year.[134] This test is designed to ensure that relevant systems function as intended in the event an MWCB is triggered.[135] Each of these firms must also verify their participation in a MWCB test by attesting that they are able to or have attempted to: (1) Receive and process MWCB halt messages from the securities information processors (''SIPs''); (2) receive and process resume messages from the SIP following a MWCB Halt; (3) receive and process market data from the SIPs relevant to MWCB Halts; and (4) send orders following a Level 1 or Level 2 MWCB halt in a manner consistent with their usual trading behavior.[136] To the extent that a member organization that participated in a MWCB test is unable to receive and process any of these messages, its attestation should notify the Exchange which messages it was unable to process and any known reason why the messages could not be received or processed.[137] Member organizations not designated pursuant to standards established in paragraphs (b)(1) and (3) of Rule 48 are permitted to participate in any MWCB test.[138]

In addition to testing of MWCB technical functionalities, the Exchange has also proposed a mandatory review of the performance of MWCBs generally, should certain events occur. In the event of a MWCB Halt, the Working Group will analyze the MWCB performance and prepare a report that documents its analysis and recommendations.[139] This report will be provided to the Commission within 6 months of MWCB Halt.[140] In the event that there is (1) a market decline of more than 5% or (2) an SRO implements a rule change that effects its reopening process following a MWCB Halt, the Exchange and the Working Group will review such event and consider when any modification should be made to the MWCB rules.[141] If the Working Group recommends that a modification be made, the Working Group will prepare a report that documents its analysis and recommendations and provide that report to the Commission.[142]

The Exchange believes that these testing obligations remove impediments to and perfect the mechanism of a free and open market and a national market system.[143] Specifically, the Exchange contends that adding specificity by requiring SCI firms to attest to their participation in the MWCB will promote stability and investor confidence in the MWCB mechanism.[144] Further, the Exchange believes that requiring firms to identify any inability to process any messages related to the MWCB mechanism will contribute to a fair and orderly market by flagging potential issues that should be corrected.[145] The Exchange also notes that the attestations, as well as the Exchange's own records regarding the MWCB test, will be preserved and retained by the Exchange.[146]

The Exchange is also of the opinion that the ''event driven'' MWCB review described in the MWCB Rules would benefit market participants, promote just and equitable principles of trade, remove impediments to and perfect the mechanism of a free and open market and a national market system, and protect investors and the public interest.[147] The Exchange believes that requiring the Working Group to review any halt triggered under the MWCB Rules and prepare a report on of its analysis and recommendations, would permit the Working Group and the Commission to evaluate the efficacy of the MWCB mechanism and whether any modifications should be made.[148] The Exchange also contends that having the Working Group review instances of a market decline of more than 5% or an SRO rule that changes its reopening process following a MWCB Halt will allow the Working Group to identify situations where it recommends that the MWCB Rules should be modified. Finally, the Exchange notes that in those situations where the Working Group recommends that a modification should be made and a report is submitted to the Commission, providing this report to the Commission will help protect investors and the public interest.[149]

The Commission believes that these testing and ongoing assessment provisions will allow the Commission and the SROs to evaluate the MWCB mechanism going forward. As noted by the Exchange, by requiring Regulation SCI firms and the Exchange to participate in yearly tests of certain basic messaging functionalities, the SROs and the Commission can help ensure that important technical aspects of the MWCB mechanism will function properly should a MWCB Halt occur. Additionally, as the Exchange noted, the results of this testing will be retained by the Exchange pursuant to its obligation to keep books and records. This will allow the Commission to review the results of the MWCB test to ensure that the MWCB mechanism continues to operate as intended.

[131] *See id.*

[132] *See id.*

[133] The Commission believes that further efforts to enhance the redundancy and resiliency of the SPX calculation is appropriate.

[134] *See* Study, supra note 27, at 9.

[135] *See id.*

[136] *See* Notice, *supra* note 3, at 42.

[137] *See* Amendment No. 1, *supra* note 7.

[138] *See supra* note 137.

[139] *See supra* note 138.

[140] *See id.*

[141] *See id.*

[142] *See id.*

[143] *See* Notice, *supra* note 3, at 47.

[144] *See id.*

[145] *See supra* note 138, at 6.

[146] *See id.*

[147] *See id.*

[148] *See id.* at 7.

[149] *See id.*

The Commission also believes that the proposed ''event driven'' reviews of the MWCB mechanism will allow the Commission and the SROs to evaluate whether any modification to the MWCB mechanism is necessary. Specifically, should a MWCB Halt occur, the SROs will examine how the MWCBs functioned and report this to the Commission. If the SROs or the Commission finds that the MWCB mechanism did not work as intended during a future MWCB Halt, then the MWCB mechanism can be further refined to address this deficiency. The Commission also supports the proposal concerning review of the MWCB when either (1) a market decline of more than 5% or (2) an SRO implements a rule that changes its reopening process following a MWCB Halt. A review of a market decline of more than 5% will allow the Working Group to evaluate significant market events that do not reach the threshold for initiating a MWCB, and determine whether any alterations to the MWCB mechanism should be made. Further, a review of any changes to reopening processes following a MWCB Halt will allow the Working Group to evaluate the implications of the proposed changes on the effectiveness of the MWCB mechanism. Finally, the Commission believes that the requirement to report any proposed modification following the Working Group's review will give the Commission an opportunity to study the event that preceded the Working Group's review and any potential modification that the Working Group recommends.

In conclusion, the Commission believes that the analysis presented by the Exchange demonstrates that the MWCBs operated effectively in accomplishing the goal of providing a trading halt during extreme market-wide declines to provide opportunities for markets and market participants to assess market conditions and systemic stress. Further, the Commission believes that the proposal sets forth testing and ongoing assessment requirements for industry members and the Exchange that should allow market participants and the Exchange to detect issues with the MWCB design or their internal system in response to MWCB halts and recommend modifications. For these reasons, the Commission finds that it is appropriate to approve the Exchange's MWCB rules on a permanent basis.

V. 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–NYSE–2021–40 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–NYSE–2021–40. 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; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–NYSE–2021–40 and should be submitted on or before April 12, 2022.

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

The Commission finds good cause, pursuant to Section 19(b)(2) of the Act,[150] to approve the proposed rule change, as modified by Amendment No. 1, prior to the 30th day after the date of publication of Amendment No. 1, in the **Federal Register**. As discussed above, Amendment No. 1 requires Exchange participation in all industry-wide testing of the MWCBs, and further requires the Exchange, together with the other SROs, to provide the Commission with a report that documents its analysis and recommendations following a halt that is triggered following a Level 1, Level 2, or Level 3 Market Decline. The amendment also requires the Exchange, together with the other SROs, to review the MWCB in the event of 5% market declines and any time an SRO makes changes to MWCB reopening processes, and provide a report to the Commission concerning such review should a modification to the MWCB be recommended. Amendment No. 1 also requires an industry member to notify the Exchange in its attestation following testing if it was unable to process any messages and, if known, why. In Amendment No. 1, the Exchange commits to maintain records documenting its participation in MWCB testing. Amendment No. 1 also provides additional detail on actions taken by SROs in response to the March 2020 MWCB halts.[151]

The Commission believes that the revisions to the proposal in Amendment No. 1 raise no novel regulatory issues. The amendment proposes additional protections that will help ensure that the MWCB design is appropriate over time. In particular, it provides for more robust ongoing testing processes and assessments of the operation of the MWCBs. The tests will be conducted on an industry-wide basis with Exchange participation and will require the creation and retention of records concerning testing effectiveness. Furthermore, the amendment provides for MWCB assessments in key events that will provide an opportunity for the Exchange, along with the other SROs, to more effectively evaluate the MWCB design. Accordingly, the Commission finds good cause, pursuant to Section 19(b)(2) of the Act,[152] to approve the proposed rule change, as modified by Amendment No. 1, on an accelerated basis.

VII. Conclusion

It is therefore ordered, pursuant to Section 19(b)(2) of the Act,[153] that the proposed rule change, as modified by Amendment No. 1, (SR–NYSE–2021–40), be, and hereby is, approved on an accelerated basis.

[150] 15 U.S.C.78s(b)(2).

[151] Amendment No. 1 also makes technical changes to the proposal to update the dates on which the MWCB Pilot Rule expires and the proposed rule would take effect.

[152] 15 U.S.C. 78s(b)(2).

[153] 15 U.S.C. 78s(b)(2).

By the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[154]

J. Matthew DeLesDernier,

Assistant Secretary.

[FR Doc. 2022–05980 Filed 3–21–22; 8:45 am]

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SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–94437; File No. SR–CboeEDGX–2022–013]

Self-Regulatory Organizations; Cboe EDGX Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend its Fee Schedule

March 16, 2022.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the ''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on March 9, 2022, Cboe EDGX Exchange, Inc. (the ''Exchange'' or ''EDGX'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I, II, and III 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

Cboe EDGX Exchange, Inc. (the ''Exchange'' or ''EDGX'' or ''EDGX Equities'') proposes to amend its Fee Schedule. The text of the proposed rule change is provided in Exhibit 5.

The text of the proposed rule change is also available on the Exchange's website (*http://markets.cboe.com/us/options/regulation/rule_filings/edgx/*), at the Exchange's Office of the Secretary, 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 Exchange proposes to amend its Fee Schedule applicable to its equities trading platform (''EDGX Equities'') as follows: (1) Amend fee code ZM so that it applies to applicable orders with a time-in-force of Good 'til Extended Day (''GTX''); and (2) modify the criteria of Growth Tier 2. The Exchange proposes to implement these changes effective March 1, 2022.[3]

The Exchange first notes that it operates in a highly competitive market in which market participants can readily direct order flow to competing venues if they deem fee levels at a particular venue to be excessive or incentives to be insufficient. More specifically, the Exchange is only one of 16 registered equities exchanges, as well as a number of alternative trading systems and other off-exchange venues that do not have similar self-regulatory responsibilities under the Exchange Act, to which market participants may direct their order flow. Based on publicly available information,[4] no single registered equities exchange has more than 17% of the market share. Thus, in such a low-concentrated and highly competitive market, no single equities exchange possesses significant pricing power in the execution of order flow. The Exchange in particular operates a ''Maker-Taker'' model whereby it pays rebates to members that add liquidity and assesses fees to those that remove liquidity. The Exchange's Fee Schedule sets forth the standard rebates and rates applied per share for orders that provide and remove liquidity, respectively. Currently, for orders in securities priced at or above $1.00, the Exchange provides a standard rebate of $0.00160 per share for orders that add liquidity and assesses a fee of $0.0030 per share for orders that remove liquidity. For orders in securities priced below $1.00, the Exchange provides a standard rebate of $0.00009 per share for orders that add liquidity and assesses a fee of 0.30% of total dollar value for orders that remove liquidity. Additionally, in response to the competitive environment, the Exchange also offers tiered pricing which provides Members opportunities to qualify for higher rebates or reduced fees where certain volume criteria and thresholds are met. Tiered pricing provides an incremental incentive for Members to strive for higher tier levels, which provides increasingly higher benefits or discounts for satisfying increasingly more stringent criteria.

As noted under the Fee Codes and Associated Fees section of the Fee Schedule, fee code ZM is appended to retail orders with a time-in-force of Day[5]/Regular Hours Only (''RHO'')[6] that remove liquidity on arrival and provides a fee/rebate of free. Now the Exchange proposes to amend fee code ZM so that is appended to retail with a time-in-force of Day/RHO or GTX[7] that remove liquidity on arrival. Currently, retail orders with a time-in-force of GTX that remove liquidity upon arrival are appended fee code ZR which are assessed a fee of $0.00300 per share in securities at or above $1.00 and 0.30% of dollar value to securities below $1.00. Therefore, the proposal would decrease the fee associated with retail orders with a time-in-force of GTX that remove liquidity upon arrival by $0.00300.

Further, the Growth Volume Tiers Volume Tiers set forth in footnote 1 of the Fee Schedule (Add/Remove Volume Tiers) provide Members an opportunity for qualifying orders (*i.e.,* orders yielding fee code B,[8] V,[9] Y,[10] 3[11] or 4[12]) to receive an enhanced rebate and are designed to encourage growth in order flow by providing specific criteria in which Members must increase their relative liquidity each month over a predetermined baseline. Growth Tier 2, for example, provides an opportunity for qualifying orders (*i.e.,* orders yielding fee code B, V, Y, 3 or 4) to receive an enhanced rebate of $0.0027 per share to Members that (1) add a Step-Up ADAV[13] from June 2021 greater than or equal to 0.10% of the TCV[14] or Members that add a Step-Up

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[154] 17 CFR 200.30–3(a)(12).

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

[2] 17 CFR 240.19b–4.

[3] The Exchange initially filed the proposed fee changes on March 1, 2022 (SR–CboeEDGX–2022–009). On March 9, 2022, the Exchange withdrew that filing and submitted this proposal.

[4] *See* Cboe Global Markets, U.S. Equities Market Volume Summary, Month-to-Date (February 27, 2022), available at *https://markets.cboe.com/us/equities/market_statistics/.*

[5] *See* Exchange Rule 11.6(q)(2)

[6] *See* Exchange Rule 11.6(q)(6).

[7] *See* Exchange Rule 11.6(q)(5).

[8] Orders yielding Fee Code ''B'' are orders adding liquidity to EDGX (Tape B).

[9] Orders yielding Fee Code ''V'' are orders adding liquidity to EDGX (Tape A).

[10] Orders yielding Fee Code ''Y'' are orders adding liquidity to EDGX (Tape C).

[11] Orders yielding Fee Code ''3'' are orders adding liquidity to EDGX in the pre and post market (Tapes A or C).

[12] Orders yielding Fee Code ''4'' are orders adding liquidity to EDGX in the pre and post market (Tape B).

[13] ''Step-Up ADAV'' means ADAV in the relevant baseline month subtracted from current ADAV.

[14] ''TCV'' means total consolidated volume calculated as the volume reported by all exchanges