

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-93628; File No. SR-Phlx-2021-56)

November 19, 2021

Self-Regulatory Organizations; Nasdaq PHLX LLC; Order Approving a Proposed Rule Change to Amend Options 4A, Section 12 Regarding the Calculation of the Closing Volume Weighted Average Price for Options on the Nasdaq-100[®] Volatility Index in Certain Circumstances

I. Introduction

On September 23, 2021, Nasdaq PHLX LLC (“Exchange” or “Phlx”) filed with the Securities and Exchange Commission (“Commission”), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)¹ and Rule 19b-4 thereunder,² a proposed rule change to amend the process used to calculate the final settlement price for Nasdaq-100 Volatility Index (“Volatility Index” or “VOLQ”) options in certain circumstances. The proposed rule change was published for comment in the Federal Register on October 7, 2021.³ The Commission received no comments on the proposed rule change. This order approves the proposed rule change.

II. Description of the Proposed Rule Change⁴

Overview

The Commission previously approved the listing and trading of VOLQ options.⁵ VOLQ is an index that measures changes in 30-day implied volatility as expressed by options on the

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ See Securities Exchange Act Release No. 93237 (October 1, 2021), 86 FR 55896 (“Notice”).

⁴ Additional information regarding the proposal can be found in the Notice, supra note 3.

⁵ See Securities Exchange Act Release No. 91781 (May 5, 2021), 86 FR 25918 (May 11, 2021) (SR-Phlx-2020-41) (Notice of Filing of Amendment Nos. 1 and 2 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment Nos. 1 and 2, To List and Trade Options on a Nasdaq-100 Volatility Index) (“Approval Order”).

Nasdaq-100 Index (“NDX”).⁶ The calculation of the final settlement price for VOLQ options, the Closing Volume Weighted Average Price or “Closing VWAP,” is based on one-second time observations of the NDX component options⁷ over a 300 second period of time (the “Closing Settlement Period”).⁸ The Closing Settlement period commences at 9:32:010 A.M. on the expiration day, and continues each second for the next 300 seconds.⁹ Now, the Exchange proposes to amend the process used to calculate the final settlement price for VOLQ options in the event any of the underlying NDX component options do not have a trade or quote during the Closing Settlement Period.

Closing VWAP Calculation in the Event One or More Component Option Series Do Not Have a Trade or Quote During Any One Second of the Observation Period

First, the Exchange proposes if, during any one second of the observation period, any of the thirty-two NDX option series used for the Closing VWAP during that second¹⁰ does not have a trade or quote, the index calculator would look back and use the most recent published quote midpoint during that day for the One Second VWAP¹¹ for the option component that does not

⁶ See Id. at 25919.

⁷ The Closing VWAP is calculated using one-second time observations of the prices and sizes of executed orders or quotes in the underlying NDX component options. See Options 4A, Section 12(b)(6)(D)(II).

⁸ See Options 4A, Section 12(b)(6)(D)(II).

⁹ See Options 4A, Section 12(b)(6)(D)(II).

¹⁰ The thirty-two component Volatility Index option inputs may change each second depending upon the movement of the Nasdaq-100 Index. See Notice, supra note 3, n.5 at 55897.

¹¹ At the end of individual one-second time observations during the Closing Settlement Period, the number of contracts resulting from orders and quotes executed on Phlx, Nasdaq ISE, LLC, and Nasdaq GEMX, LLC at each price during the observation period is multiplied by that price to yield a reference number (“Reference Number”). See Options 4A, Section 12(b)(6)(D)(II). All Reference Numbers are then summed, and that sum is then divided by the total number of contracts traded during the observation period

have a trade or quote.¹² If there is no One Second VWAP to utilize for any of the thirty-two NDX option series during the Closing Settlement Period, then the index calculator will consider that Closing Settlement Period invalid and will be unable to determine a Closing VWAP at that time.

Second, in the event the Closing Settlement Period is invalid and a Closing VWAP cannot be determined, the Exchange proposes that the index calculator will then roll the Closing Settlement Period forward by one second and determine if there is a One Second VWAP for each of the thirty-two NDX option series for all 300 consecutive seconds of the new Closing Settlement Period. If there is a One Second VWAP for all of the thirty-two NDX option series for all 300 consecutive seconds, a Closing VWAP will be calculated. If a One Second VWAP is not present for all of the thirty-two NDX option series during the new observation period, the index calculator will again roll the Closing Settlement Period forward by one second. The index calculator would continue to roll the Closing Settlement Period forward by one second until such time as it is able to capture a One Second VWAP for each of the thirty-two NDX option series for all 300 consecutive seconds. At that time, a Closing VWAP will be calculated.

The Exchange states that the proposal seeks to create an automated, non-discretionary process by which the Exchange would determine the Closing VWAP in the event any of the thirty-two underlying NDX component options do not have a trade or quote during the Closing

[Sum of (contracts traded at a price x price) ÷ total contracts traded)] to calculate a Volume Weighted Average Price for that observation period (a “One Second VWAP”) for that component option. See id.

¹² The Exchange would utilize a quote from the Opening Process only in the event an options series was able to open. See Notice, supra note 3, at 55898. If the Opening Process did not complete for an options series, there would be no value to obtain for a component during a look back. See id.

Settlement Period.¹³ The Exchange further states that it does not anticipate utilizing the alternative Closing VWAP calculation on a regular basis.¹⁴ According to the Exchange, a review of 43 expiration dates from January 2018 through July 2021 revealed invalid values for only 2 expiration dates.¹⁵

Closing VWAP Calculation in the Event of a Trading Halt

The Exchange also proposes that, in the event of a trading halt in one or more options, excluding a trading halt in all Nasdaq-100 index options, prior to the completion of the Closing Settlement Period, the Exchange would continue to look back for a One Second VWAP prior to looking forward. In the event a trading halt caused market makers to not submit a valid width quote in certain components during the Opening Process, the alternative methodology would look forward to obtain a value.¹⁶

The Exchange also proposes to modify its existing rule text relating to trading halts. Currently, Options 4A, Section 12(b)(6)(D)(II) provides, “If the Exchange is unable to publish a settlement value by 12:00 p.m. (New York time) due to a trading halt, the Exchange will commence the calculation of the settlement window beginning 2.00.001 minutes after the re-opening of trading and publish that value on its website.”¹⁷ The Exchange proposes to replace this rule text with language that provides, “In the event of a trading halt in all Nasdaq-100 index

¹³ See Notice, supra note 3, at 55897.

¹⁴ See id.

¹⁵ See Notice, supra note 3, at 55897. The Exchange states that it reviewed the 9,660 NBBO inputs for the VOLS computation from 9:32.01 for the five minute Closing Settlement Period for each expiration date. See id. at 55897 n.11.

¹⁶ See id. at 55898.

¹⁷ See Phlx Options 4A, Section 12(b)(6)(D).

options, the Exchange would commence the calculation of the settlement window beginning 2:00:01¹⁸ minutes after the re-opening of trading and publish that value on its website. In this scenario, the Exchange would not look back prior to the trading halt.” The Exchange’s proposal amends the current sentence to eliminate the reference to 12:00 p.m., as a re-opening could occur any time during the trading day. Further, the Exchange states that specifically indicating a trading halt of the Nasdaq-100 index options in the rule text is more precise and the proposed rule text more directly expands upon the manner in which the Closing VWAP will be handled in the event of trading halt.¹⁹

Amendment to Definition of “Executed Orders”

Finally, the Exchange proposes to amend the term “executed orders” at Options 4A, Section 12(b)(6)(D)(II) which currently provides, “Executed orders shall include simple orders and complex orders however, individual leg executions of a complex order will only be included if the executed price of the leg is at or within the NBBO.” The Exchange proposes to exclude out-of-sequence and late trades. The Exchange states that excluding out-of-sequence and late trades would avoid potential stale data in the Closing VWAP calculation.²⁰

Surveillance

The Exchange also states that because the thirty-two component Volatility Index option inputs are reviewed each second as the market changes to determine the at-the-money strikes (meaning that Volatility Index components could change 300 times during the Closing

¹⁸ The Exchange also proposes to correct the time when the Exchange will commence the calculation of the settlement window from 2.00.001 minutes to 2:00:01 minutes. The calculation begins on the second.

¹⁹ See Notice, supra note 3, at 55898.

²⁰ See id.

Settlement Period), market participants could manipulate the Closing VWAP only if they could replicate such value by guessing exact market moves over an extended period of 300 million microseconds.²¹ Because the Exchange believes that the likelihood of replication is extremely low, the Exchange believes that it is unlikely the Closing VWAP could be manipulated.²² Nonetheless, the Exchange states that, in its normal course of surveillance, it will monitor for any potential manipulation of the Volatility Index settlement value according to the Exchange's current procedures.²³ Additionally, the Exchange would monitor the integrity of the Volatility Index by analyzing trades, quotations, and orders that affect any of the 300 calculated reference prices for any of the NDX option series used for the Closing VWAP for potential manipulation on the Exchange.²⁴

Implementation of VOLQ Options

The Exchange proposes to issue an Options Trader Alert announcing the day it will launch options on the Volatility Index. At this time, the Exchange proposes to launch VOLQ options on or before March 31, 2022.

III. Discussion and Commission Findings

After careful review of the proposed rule change, the Commission finds that the proposed rule change is consistent with the Act and the rules and regulations thereunder applicable to a national securities exchange.²⁵ In particular, the Commission finds that the proposed rule change

²¹ See id. at 55899.

²² See id.

²³ See id.

²⁴ See id.

²⁵ 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).

is consistent with Section 6(b)(5) of the Act,²⁶ which requires, among other things, that the Exchange's rules be designed to prevent fraudulent and manipulative acts and practices, to promote just and 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.

In support of its proposal, the Exchange states that its proposed alternate methodology may be utilized where there is no liquidity in any of the thirty-two NDX option series used for the Closing VWAP, which may be caused by, among other things, an Exchange system issue, market maker issue, or a halt in an underlying, and would ensure a Closing Settlement Period which has published liquidity for all of the thirty-two NDX option series used for the Closing VWAP.²⁷ The Exchange further states that its proposal would create an automated, non-discretionary process to ensure that the Closing VWAP is calculated consistently in these circumstances, which the Exchange believes would occur infrequently.²⁸ Because market participants could not predict which options components would be included in the Closing VWAP calculation since that would entail predicting where the NDX price level (a function of predicting the price of all one-hundred component stocks) will be at the end of each of the 300 individual one-second time periods, the Exchange believes that it is unlikely that the Volatility Index Closing VWAP could be manipulated.²⁹ The Exchange further states that, in its normal course of surveillance, it will monitor for any potential manipulation of the Volatility Index

²⁶ 15 U.S.C. 78f(b)(5).

²⁷ See Notice, supra note 3, at 55899.

²⁸ See id. See also, supra note 14.

²⁹ See id.

Closing VWAP and will monitor the integrity of the Volatility Index by analyzing trades, quotations, and orders that affect any of the 300 calculated reference prices for any of the NDX option series used for the Closing VWAP for potential manipulation on the Exchange.³⁰

The Commission believes the Exchange's proposal would ensure a consistent and transparent process for calculating the Closing VWAP in situations where there is no liquidity in one or more of the thirty-two NDX option series used each second to calculate the Closing VWAP. This may occur, for example, if there is an Exchange system issue, a market maker issue, or a halt in an underlying. Further, the Exchange's proposal more specifically details the process for calculating the Closing VWAP in the event of a trading halt in all NDX options. According to the Exchange, the need for the alternate methodology would arise infrequently.³¹ However, in those limited circumstances where there is no input for one or more component options during the primary Closing Settlement Period, the proposed settlement methodology would help to ensure there is sufficient liquidity in the component options and provide a clear alternate process to allow the Exchange to calculate a Closing VWAP.

In addition, the Exchange states it will monitor for any potential manipulation of the Volatility Index settlement value in the normal course of its surveillance and will monitor the integrity the Volatility Index by analyzing trades, quotations, and orders that affect any of the 300 calculated reference prices for any of the NDX option series used for the Closing VWAP for potential manipulation on the Exchange.³² Consistent with the original approval of the listing and

³⁰ See id. at 55899-900.

³¹ See supra note 14.

³² See Approval Order at supra note 5 for a more detailed description of the Exchange's planned surveillances.

trading of VOLQ options,³³ the Commission believes that the Exchange's surveillance of options on the Volatility Index and the component option series will allow it to adequately surveil for any potential manipulation in the trading of VOLQ and will help to ensure that the settlement value is not readily susceptible to manipulation.

Accordingly, the Commission finds that the proposed rule change is consistent with Section 6(b)(5) of the Act³⁴ and the rules and regulations thereunder applicable to a national securities exchange.

IV. Conclusion

IT IS THEREFORE ORDERED, pursuant to Section 19(b)(2) of the Act,³⁵ that the proposed rule change (SR-Phlx-2021-56) be, and hereby is, approved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.³⁶

J. Matthew DeLesDernier
Assistant Secretary

³³ See Approval Order, supra note 5.

³⁴ 15 U.S.C. 78f(b)(5).

³⁵ Id.

³⁶ 17 CFR 200.30-3(a)(12).