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SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-96703; File No. SR-CBOE-2023-005]

Self-Regulatory Organizations; Cboe Exchange, Inc.; Notice of Filing of a Proposed Rule Change to Make Permanent the Operation of its program that Allows the Exchange to List P.M.-Settled Third Friday-of-the-Month S&P 500 Stock Index ("S&P 500") Options ("SPX") Series

January 18, 2023.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act"),[1] and Rule 19b-4 thereunder,[2] notice is hereby given that on January 6, 2023, Cboe Exchange, Inc. ("Exchange" or "Cboe Options") filed with the Securities and Exchange Commission ("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 Exchange, Inc. (the "Exchange" or "Cboe Options") proposes to make permanent the operation of its program that allows the Exchange to list P.M.- settled third Friday-of-the-month S&P 500 Stock Index ("S&P 500") options ("SPX") series. The text of the proposed rule change is provided below.

(additions are italicized; deletions are [bracketed])

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Rules of Cboe Exchange, Inc.

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Rule 4.13. Series of Index Options

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Interpretations and Policies

.01-.12 No change.

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

2 17 CFR 240.19b-4.

.13 In addition to A.M.-settled S&P 500 Stock Index ("SPX") options approved for trading on the Exchange pursuant to Rule 4.13, the Exchange may also list options on SPX whose exercise settlement value is derived from closing prices on the last trading day prior to expiration (P.M.-settled third Friday-of-the-month SPX options series).

.14 The Exchange may [also] list options on the Mini-SPX Index ("XSP") and Mini-RUT Index ("MRUT") whose exercise settlement value is derived from closing prices on the last trading day prior to expiration ("P.M.-settled"). [P.M.-settled third Friday-of-the-month SPX options series and] P.M.-settled XSP and MRUT options will be listed for trading for a pilot period ending May 8, 2023.

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The text of the proposed rule change is also available on the Exchange's website (http://www.cboe.com/AboutCBOE/CBOELegalRegulatoryHome.aspx), 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 make permanent its Pilot Program that permits the Exchange to list SPX options whose exercise settlement value is derived from closing prices on the last trading day prior to expiration ("SPXPM"). The Securities and Exchange Commission (the "Commission") approved a rule change that established the SPXPM Pilot Program on February 8, 2013.[3] The Exchange has since continuously extended the pilot period, which, pursuant to

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[3] See Securities Exchange Act Release No. 68888 (February 8, 2013), 78 FR 10668 (February 14, 2013) (SR-CBOE-2012-120) (the "SPXPM Approval Order"). Pursuant to Securities Exchange Act Release No. 80060 (February 17, 2017), 82 FR 11673 (February

current Rule 4.13.13,[4] is currently set to expire on the earlier of May 8, 2023 or the date on which the SPXPM Pilot Program is approved on a permanent basis.[5] The Exchange hereby requests that the Commission approve the SPXPM Pilot Program on a permanent basis.[6]

By way of background, when cash-settled[7] index options were first introduced in the 1980s, settlement was based on the closing value of the underlying index on the option's expiration date. The Commission later became concerned about the impact of P.M.-settled, cash-settled index options on the markets for the underlying stocks at the close on expiration Fridays. Specifically, certain episodes of price reversals around the close on quarterly expiration

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24, 2017) (SR-CBOE-2016-091), the Exchange moved third-Friday P.M.-settled options into the S&P 500 Index options class, and as a result, the trading symbol for P.M.-settled S&P 500 Index options that have standard third Friday-of-the-month expirations changed from "SPXPM" to "SPXW." This change went into effect on May 1, 2017, pursuant to Cboe Options Regulatory Circular RG17-054.

4 In 2019, the Exchange relocated prior Rule 24.9, containing the provision which governs the Pilot Program, to current Rule 4.13. See SR-CBOE-2019-092 (October 4, 2019), which did not make any substantive changes to prior Rule 24.9 and merely relocated it to Rule 4.13.

5 See Securities Exchange Act Release Nos. 71424 (January 28, 2014), 79 FR 6249 (February 3, 2014) (SR-CBOE-2014-004); 73338 (October 10, 2014), 79 FR 62502 (October 17, 2014) (SR-CBOE-2014-076); 77573 (April 8, 2016), 81 FR 22148 (April 14, 2016) (SR-CBOE-2016-036); 80386 (April 6, 2017), 82 FR 17704 (April 12, 2017) (SR-CBOE-2017-025); 83166 (May 3, 2018), 83 FR 21324 (May 9, 2018) (SR-CBOE-2018-036); 84535 (November 5, 2018), 83 FR 56129 (November 9, 2018) (SR-CBOE-2018-069); 85688 (April 18, 2019), 84 FR 17214 (April 24, 2019) (SR-CBOE-2019-023); 87464 (November 5, 2019), 84 FR 61099 (November 12, 2019) (SR-CBOE-2019-107); 88674 (April 16, 2020), 85 FR 22479 (April 22, 2020) (SR-CBOE-2020-036); 90263 (October 23, 2020), 85 FR 68611 (October 29, 2020) (SR-CBOE-2020-100); 91698 (April 28, 2021) 86 FR 23761 (May 4, 2021) (SR-CBOE-2021-027); 93455 (October 28, 2021), 86 FR 60660 (November 3, 2021) (SR-CBOE-2021-062); 94799 (April 27, 2022), 87 FR 26244 (May 3, 2022) (SR-CBOE-2022-019); and 96222 (November 3, 2022), 87 FR 67736 (November 9, 2022) (SR-CBOE-2022-054).

6 The Exchange notes that it also proposes to adopt Rule 4.13.14 to continue to govern the Pilot Programs also currently in place in Rule 4.13.13 which permit the Exchange to list P.M.-settled options on the Mini-SPX Index ("XSP") and Mini-RUT Index ("MRUT"). The Exchange plans to submit a separate proposal to make the operation of these P.M. Pilot Programs permanent following Commission approval of this proposal.

7 The seller of a "cash-settled" index option pays out the cash value of the applicable index on expiration or exercise. A "physically settled" option, like equity and ETF options, involves the transfer of the underlying asset rather than cash. See Characteristics and Risks of Standardized Options, available at: https://www.theocc.com/Company-Information/Documents-and-Archives/Options-Disclosure-Document.

dates attracted the attention of regulators to the possibility that the simultaneous expiration of index futures, futures options, and options might be inducing abnormal volatility in the index value around the close.[8] Academic research at the time provided at least some evidence suggesting that futures and options expirations contributed to excess volatility and reversals around the close on those days.[9] In light of the concerns with P.M. settlement and to help ameliorate the price effects associated with expirations of P.M.-settled, cash-settled index products, in 1987, the Commodity Futures Trading Commission ("CFTC") approved a rule change by the Chicago Mercantile Exchange ("CME") to provide for A.M. settlement[10] for index futures, including futures on the S&P 500.[11] The Commission subsequently approved a rule change by Cboe Options to list and trade A.M.-settled SPX options.[12] In 1992, the Commission approved Cboe Options' proposal to transition all of its European-style cash-settled options on the S&P 500 Index to A.M. settlement[13]; however, in 1993, the Commission approved a rule allowing Cboe Options to list P.M.-settled options on certain broad-based indices, including the S&P 500, expiring at the end of each calendar quarter ("Quarterly Index Expirations") (since

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8 The close of trading on the quarterly expiration Friday (i.e., the third Friday of March, June, September and December), when options, index futures, and options on index futures all expire simultaneously, became known as the "triple witching hour."

9 See Securities and Exchange Commission, Division of Economic Risk and Analysis, Memorandum, Cornerstone Analysis of PM Cash-Settled Index Option Pilots (February 2, 2021) ("DERA Staff PM Pilot Memo") at 5, available at: https://www.sec.gov/files/Analysis_of_PM_Cash_Settled_Index_Option_Pilots.pdf.

10 The exercise settlement value for an A.M.-settled index option is determined by reference to the reported level of the index as derived from the opening prices of the component securities on the business day before expiration.

11 See Securities Exchange Act Release No. 24367 (April 17, 1987), 52 FR 13890 (April 27, 1987) (SR-CBOE-87-11) (noting that CME moved S&P 500 futures contract's settlement value to opening prices on the delivery date).

12 See id.

13 See Securities Exchange Act Release No. 30944 (July 21, 1992), 57 FR 33376 (July 28, 1992) (SR-CBOE-92-09). Thereafter, the Commission approved proposals by the options markets to transfer most of their cash-settled index products to A.M. settlement.

adopted as permanent).[14] Starting in 2006, the Commission approved numerous rule changes, on a pilot basis, permitting the Cboe Options to introduce other index options, including SPX options, with P.M.-settlement. These include P.M.-settled index options expiring weekly (other than the third Friday) and at the end of each month ("EOM"),[15] SPXPM, as well as P.M.-settled Mini-SPX Index ("XSP") options and Mini-Russell 2000 Index ("MRUT") options expiring on the third Friday.[16]

As stated above, since its inception in 2013, the Exchange has continuously extended the SPXPM Pilot Program period and, during the course of the SPXPM Pilot Program and in support of the extensions of the SPXPM Pilot Program, the Exchange has submitted reports to the Commission regarding the Pilot Program that detail the Exchange's experience with the Pilot Program, pursuant to the SPXPM Approval Order.[17] Specifically, the Exchange has submitted annual Pilot Program reports to the Commission that contain an analysis of volume, open interest, and trading patterns. The analysis examines trading in SPX options, as well as trading in the securities that comprise the S&P 500 Index. Additionally, for series that exceed certain minimum open interest parameters, the annual reports provide analysis of index price volatility and share trading activity. The Exchange has also submitted periodic interim reports that contain

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14 See Securities Exchange Act Release No. 31800 (February 1, 1993), 58 FR 7274 (February 5, 1993) (SR-CBOE-92-13); and see Rule 4.13(a)(2)(B); see also Securities Exchange Act Release Nos. 54123 (July 11, 2006), 71 FR 40558 (July 17, 2006) (SR-CBOE-2006-65); and 60164 (June 23, 2009), 74 FR 31333 (June 30, 2009) (SR-CBOE-2009-029).

15 See Securities Exchange Act Release Nos. 62911 (September 14, 2010), 75 FR 57539 (September 21, 2010) (SR-CBOE-2009-075); 76529 (November 30, 2015), 80 FR 75695 (December 3, 2015) (SR-CBOE-2015-106); 78132 (June 22, 2016), 81 FR 42018 (June 28, 2016) (SR-CBOE-2016-046); and 78531 (August 10, 2016), 81 FR 54643 (August 16, 2016) (SR-CBOE-2016-046).

16 See Securities Exchange Act Release Nos. 70087 (July 31, 2013), 78 FR 47809 (August 6, 2013) (SR-CBOE-2013-055); and 91067 (February 5, 2021) 86 FR 9108 (February 11, 2021) (SR-CBOE-2020-116).

17 See supra note 3.

some, but not all, of the information contained in the annual reports (together with the periodic interim reports, the "pilot reports").[18]

The pilot reports contained the following volume and open interest data:

(1) monthly volume aggregated for all trades;

(2) monthly volume aggregated by expiration date;

(3) monthly volume for each individual series;

(4) month-end open interest aggregated for all series;

(5) month-end open interest for all series aggregated by expiration date; and

(6) month-end open interest for each individual series.

The annual reports also contained the information noted in Items (1) through (6) above for Expiration Friday, A.M.-settled SPX options traded on Cboe Options, as well as the following analysis of trading patterns in SPX options series in the Pilot Program:

(1) a time series analysis of open interest; and

(2) an analysis of the distribution of trade sizes.

Finally, for series that exceed certain minimum parameters,[19] the annual reports contained the following analysis related to index price changes and underlying share trading volume at the close on Expiration Fridays:

(1) a comparison of index price changes at the close of trading on a given Expiration Friday with comparable price changes from a control sample. The data includes a calculation of percentage price changes for various time intervals and compare that information to the respective control sample. Raw percentage price change data as

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18 In providing the pilot reports to the Commission, the Exchange previously requested confidential treatment of the pilot reports under the Freedom of Information Act ("FOIA"). See 5 U.S.C. 552.

19 The Exchange and the Commission determined the minimum open interest parameters, control sample, time intervals, method for randomly selecting the component securities, and sample periods.

well as percentage price change data normalized for prevailing market volatility, as measured by the Cboe Volatility Index (VIX), is provided; and

(2) a calculation of share volume for a sample set of the component securities representing an upper limit on share trading that could be attributable to expiring in-the-money series. The data includes a comparison of the calculated share volume for securities in the sample set to the average daily trading volumes of those securities over a sample period.

Also, during the course of the SPXPM Pilot Program, the Exchange provided the Commission with any additional data or analyses the Commission requested if it deemed such data or analyses necessary to determine whether the Pilot Program was consistent with the Exchange Act. The Exchange has made public on its website all data and analyses previously submitted to the Commission under the Pilot Program,[20] and will continue to make public any data and analyses it submits to the Commission while the SPXPM Pilot Program is still in effect.

The Exchange has concluded that the SPXPM Pilot Program does not negatively impact market quality or raise any unique or prohibitive regulatory concerns. The Exchange has not identified any evidence from the pilot data indicating that the trading of P.M.-settled SPX options has any adverse impact on fair and orderly markets on Expiration Fridays for the S&P 500 Index or the underlying securities comprising the S&P 500, nor have there been any observations of abnormal market movements attributable to P.M.-settled SPX options from any market participants that have come to the attention of the Exchange. Based on a study conducted by the Commission's Division of Economic and Risk Analysis ("DERA") staff on the pilot data from 2006 through 2018,[21] and the Exchange's review of the pilot data from 2019 through 2021,

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20 Available at https://www.cboe.com/aboutcboe/legal-regulatory/national-market-system-plans/pm-settlement-spxpm-data.

21 See DERA Staff PM Pilot Memo, at 13 ("Option settlement quantity data for A.M.- and P.M.-settled options were obtained from the Cboe, including the number of contracts that settled in-the-money for each exchange-traded option series on the S&P 500 index…on expiration days from January 20, 2006 through December 31, 2018. Daily open interest

the size of the market for P.M.-settled SPX options (including quarterly, weekly, EOM and third Friday expirations) since 2007 has grown from a trivial portion of the overall market to a substantial share (from around 0.1% of open interest in 2007 to 30% in 2021).[22] Notional value of open interest in P.M.-settled SPX options increased from approximately a median of $1.5 billion in 2007 to $1.9 trillion in 2021, approximately 1260 times its value in 2007. Notional open interest in A.M.-settled SPX options was already hovering around a median of $1.4 trillion in 2007, and it has since increased to approximately $4.4 trillion in 2021. It is also important to note that open interest on expiring P.M.-settled SPX options, as compared to A.M.-settled options, is spread out across a greater number of expiration dates, which results in a smaller percentage of open interest expiring on any one date, thus mitigating concerns that SPXPM option expiration may have a disruptive effect on the market.[23] Daily trading volume in P.M.-settled SPX options has increased from a median of about 700 contracts in 2007 to nearly 1.9 million contracts in 2021,[24] and now exceeds trading volume in A.M.-settled SPX options.

Moreover, the DERA staff study of the P.M.-settled SPX options pilot data (2006 through 2018) did not identify any significant economic impact on S&P 500 futures,[25] the S&P 500, or the underlying component securities of the S&P 500 surrounding the close. For purposes of the

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and volume data for [SPX] option series were also obtained from Cboe, including open interest data from January 3, 2006 through December 31, 2018 and trading volume data from January 3, 2006 through December 31, 2018.")

22 The DERA staff study reviewed and provided statistics for market share, median notional value of open interest and median volume in 2007 and in 2018. The Exchange provides updated statistics for market share, median notional value of open interest and median volume in 2021, replacing the 2018 statistics provided in the Commission staff study.

23 See DERA Staff PM Pilot Memo, at 2.

24 The Exchange notes that the DERA staff study used two-sided volume data for the median volume in 2007 and in 2018; therefore, the Exchange provides two-sided volume data for the median volume in 2021.

25 Futures on the S&P 500 experience high volume and liquidity both before and after the close of the underlying market. Therefore, futures are a useful measure of abnormal volatility surrounding the close and the open. See DERA Staff PM Pilot Memo, at 14. The Exchange agrees with this approach.

study, volatility was by and large measured by using the standard deviation[26] of one-minute returns of S&P 500 futures values and the index value during regular hours on each day reviewed (excluding the first and last 15 minutes of trading) and then compared with the standard deviation of one-minute returns (for S&P 500 futures, the S&P 500, and the underlying component securities of the S&P 500) over the last 15 minutes of a trading day.[27] Using this as a general measure,[28] the DERA staff study then reviewed whether, and to what extent, the settlement quantity of SPXPM options and the levels of open interest in SPXPM options on expiration days (as compared to non-expiration days) may be associated with general price volatility and price reversals for S&P 500 futures, the S&P 500, and the underlying component securities of the S&P 500 near the close. From its review of the study, the Exchange agrees that, although volatility before the market close is generally higher than during the rest of the trading day, there is no evidence of any significant adverse economic impact to the futures, index, or underlying index component securities markets as a result of the quantity of P.M.-settled SPX options that settle at the close or the amount of expiring open interest in P.M.-settled SPX options. For example, the largest settlement event that occurred during the time period of the study (a settlement of $100.4 billion of notional on December 29, 2017) had an estimated impact

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26 Standard deviation applied to a rate of return (in this case, one-minute) of an instrument can indicate that instrument's historical volatility. The greater the standard deviation, the greater the variance between price and the mean, which indicates a larger price range, i.e., higher volatility.

27 For example, if on a particular day the standard deviation of one-minute returns between 3:45 p.m. ET and 4:00 p.m. ET is 0.004 and the standard deviation of returns from 9:45 a.m. ET to 3:45 p.m. ET is 0.002, this metric would take on a value of 2 for that day, indicating that volatility during the last 15 minutes of the trading day was twice as high as it was during the rest of the trading day. See DERA Staff PM Pilot Memo, at 15; see also DERA Staff PM Pilot Memo, at Section V, which discusses in detail the metrics used to measure, for the purposes of the study, the extent to which the market may experience abnormal volatility surrounding SPXPM option settlement.

28 See DERA Staff PM Pilot Memo, at Section V, which discusses in detail the metrics used to measure, for the purposes of the study, the extent to which the market may experience abnormal volatility surrounding SPXPM option settlement.

on the futures price of only approximately 0.02% (a predicted impact of $0.54 relative to a closing futures price of $2,677).

In particular, the DERA staff study found that an additional P.M.-settled SPX options settlement quantity equal to $10 billion in notional value is associated with a marginal impact on futures prices during the last 15 minutes of the trading day of only about $0.06 (where the hypothetical index level is 2,500), additional expiring open interest in P.M.-settled SPX options equal to $10 billion in notional value is associated with a marginal impact on futures prices during the last 15 minutes of the trading day of only about $0.05 (assumed index level is 2,500). Also, an additional increase in settlement quantity or in expiring open interest, each equal to $20 million in notional value, did not result in any meaningful futures price reversals near the close (neither was found to cause a price reversal of over one standard deviation[29]).

Likewise, the study identified that an additional total P.M.-settled SPX options settlement quantity equal to $10 billion in notional value corresponds to price movement in the S&P 500 of only about $0.08 (assuming an index level of 2,500) during the last 15 minutes of the trading day, and that additional expiring open interest equal to $10 billion in notional value corresponds to a price movement in the S&P 500 of only about $0.06 (assuming an index level of 2,500) during the last 15 minutes of the trading day. The study also identified that it would take an increase of $34 billion in notional value of total settlement quantity and of expiring open interest for one additional S&P 500 price reversal of greater than two standard deviations to occur in the last 15 minutes before the market close. Also, regarding potential impact to S&P 500 component securities, it would take an increase in total P.M.-settled SPX options settlement quantity equal to $20 billion to effect a price movement of only approximately $0.03 for a $200 stock, an increase in expiring open interest in P.M.-settled SPX options equal to $10 billion to effect a

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29 See supra note 26.

price movement less than half a standard deviation, and an increase in total P.M.-settled SPX settlement quantity equal to $7 billion to achieve a price reversal greater two standard deviations.

The study employed the same metrics to determine whether there is greater price volatility for S&P 500 futures, the S&P 500, and the component securities of the S&P 500 related to SPXPM option settlements during an environment of high market volatility (i.e., on days in which the VIX Index was in the top 10% of closing index values) and did not identify indicators of any significant economic impact on these markets near the close as a result of the P.M.-settled SPX options settlement.[30] In addition to this, the DERA staff study, applying the same metrics and analysis as for P.M.-settled SPX options to A.M.-settled SPX options, did not identify any evidence of a statistically significant relationship between settlement quantity or expiring open interest of A.M.-settled options and volatility near the open.

Upon review of the results of the DERA staff study, the Exchange agrees that each of the above-described marginal price movements in S&P 500 futures, the S&P 500, and the S&P 500 component securities affected by increases in P.M.-settled SPX options settlement quantity and expiring open interest appear to be de minimis pricing changes from those that occur over regular trading hours (outside of the last 15 minutes of the trading day). Further, the Exchange has not observed any significant economic impact or other adverse effects on the market from similar reviews of its pilot reports and data submitted after 2018.[31] In its review of a sample of the pilot data from 2019 through 2021, the Exchange similarly measured volatility over the final fifteen minutes of each trading day by taking the standard deviation of rolling one-minute returns of the S&P 500 level (excluding the first and last fifteen minutes of trading) and comparing such

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30 The Exchange also notes that the study did not identify any evidence that less liquid S&P 500 constituent securities experienced any greater impact from the settlement of P.M.-settled SPX options.

31 Total SPX open interest volumes were examined for expiration dates over a roughly two-year period between October 2019 and November 2021.

with the standard deviation of one-minute returns[32] of the S&P 500 level, over the last 15 minutes of a trading day. The Exchange identified an average standard deviation ratio of 1.42 for the S&P 500 on non-expiration days and an average standard deviation ratio of 1.54 for the S&P 500 on expiration days (a ratio between expiration days and non-expiration days of 1.09). The Exchange also notes that, using the same methodology, it observed that, from 2015 through 2019,[33] the average standard deviation ratio for the S&P 500 on non-expiration days was 1.11 and the average standard deviation ratio for the S&P 500 on expiration days was 1.22 (a ratio between expiration days and non-expiration days of 1.10). While the average standard deviation ratio on both expiration and non-expiration days was higher in 2019 through 2021 due to overall market volatility, the ratios between the standard deviation ratios on expiration days and non-expirations days remained nearly identical between the 2015 through 2019 timeframe and the 2019 through 2021. This shows that, in cases where overall market volatility may increase, the normalized impact on expiration days to non-expiration days generally remains consistent.

In addition to this, the Exchange notes that the S&P 500 is rebalanced quarterly. The changes resulting from each rebalancing coincide with the third-Friday of the quarterly rebalancing month (i.e., March, June, September, October and December)[34] and generally drive an increase in trading activity from investors that seek to track the S&P 500. As such, The Exchange measured volatility on quarterly rebalancing dates and found that the average standard deviation ratio was 1.62, which suggests more closing volatility on quarterly rebalance dates compared to non-quarterly expiration dates (for which the average standard deviation ratio was

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32 Calculated at every tick for the prior minute.

33 November 2015 through November 2021.

34 See S&P Dow Jones Indices, Equity Indices Policies & Practices, Methodology (August 2021), at 15, available at https://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-equity-indices-policies-practices.pdf.

1.22), thus indicating that the impact rebalancing may have on the S&P 500 is greater than any impact that P.M.-settled SPX options may have on the S&P 500.

The Exchange additionally focused its study of the post-2018 sample pilot data on reviewing for potential correlation between excess market volatility and price reversals and the hedging activity of liquidity providers. As explained in the DERA staff study, potential impact of P.M.-settled SPX options on the correlated equity markets is thought to stem from the hedging activity of liquidity providers in such options.[35] To determine any such potential correlation, the Exchange studied the expected action of liquidity providers that are the primary source of the hedging on settlement days. These liquidity providers generally delta-hedge their S&P 500 index exposure via S&P 500 futures and on settlement day unwind their futures positions that correspond with the delta of their in-the-money (ITM) expiring P.M.-settled SPX options. Assuming such behavior, the Exchange estimated the Market-On-Close ("MOC")[36] volume for the shares of the S&P 500 component securities (i.e., "MOC share volume") that could ultimately result from the unwinding of the liquidity providers' futures positions by equating the notional value of the futures positions that correspond to expiring ITM open interest to the number S&P 500 component security contracts (based on the weight of each S&P 500 component security). That is, the Exchange calculated (an estimate) of the amount of MOC volume in the S&P 500 component markets attributable hedging activity as a result of expiring ITM P.M.-settled SPX options (i.e., "hedging MOC"). The Exchange then: (1) compared the hedging MOC share volume to all MOC share volume on expiration days and non-expiration trading days; and (2) compared the notional value of the hedging futures positions (i.e., that correspond to expiring ITM P.M.-settled SPX options open interest) to the notional value of expiring ITM P.M.-settled SPX options open interest, the notional value of all expiring P.M.-

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35 See DERA Staff PM Pilot Memo, at 10-12.

36 MOC orders allow a market participant to trade at the closing price. Market participants generally utilize MOC orders to ensure they exit positions at the end of the trading day.

settled SPX options open interest and the notional value of all P.M.-settled SPX options open interest.

The Exchange observed that, on average, there were approximately 25% more MOC shares executed on expiration days (332 expiration days) than non-expiration days (209 non-expiration days). While, at first glance, the volume of MOC shares executed on expiration days seems much greater than the volume executed on non-expiration days, the Exchange notes that much of this difference is attributable to just eight expiration days — the quarterly index rebalancing dates captured within the scope of the post-2018 sample pilot data. The average MOC share volume on the eight quarterly rebalancing dates was approximately 4.8 times the average MOC share volume on the non-quarterly rebalancing expiration dates; again, indicating that the impact rebalancing may have on the S&P 500 Index is greater than any impact that P.M.-settled SPX options may have on the S&P 500 Index. That is, the Exchange observed that the majority of closing volume on quarterly rebalance dates is driven by rebalancing of shares in in the S&P 500, and not by P.M.-settled SPX options expiration-related hedging activity. Notwithstanding the MOC share volume on quarterly rebalancing dates, the volume of MOC shares executed on expiration days (324 expiration days) was only approximately 13% more than that on non-expiration days, substantially less than the increase in volume over non-expiration days wherein the eight index rebalancing dates are included in expiration day volume. In addition to this, the Exchange observed that the hedging MOC share volume (i.e., the expected MOC share volume resulting from hedging activity in connection with expiring ITM P.M.-settled SPX options) was, on average, less than the MOC share volume on non-expiration days, and was only approximately 20% of the total MOC share volume on expiration days, indicating that other sources of MOC share volume generally exceed the volume resulting from hedging activity of expiring ITM P.M.-settled SPX options and would more likely be a source of any potential market volatility.

The Exchange also observed that, across all third-Friday expirations, the notional value of the hedging futures positions was approximately 25% of the notional value of expiring ITM P.M.-settled SPX options, approximately 3.8% of the notional value of all expiring P.M.-settled SPX options, and approximately only 0.5% of the notional value of all P.M.-settled SPX options. As such, the estimated hedging activity from liquidity providers on expiration days is a fraction of the expiring open interest in P.M.-settled SPX options, which, the Exchange notes, is only 14% of the total open interest in P.M.-settled SPX options; thus, indicating negligible capacity for hedging activity to increase volatility in the underlying markets.

While unrelated to the initial concerns of P.M.-settlement as described above, at the request of the Commission, the Exchange recently completed an analysis intended to evaluate whether the SPXPM Program impacted the quality of the SPX option market. Specifically, the Exchange compared values of key market quality indicators (specifically, the bid-ask spread[37] and effective spread[38]) in SPXW options both before and after the introduction of Tuesday expirations and Thursday expirations for SPXW options on April 18 and May 11, 2022, respectively.[39] Options on the Standard & Poor's Depositary Receipts S&P 500 ETF ("SPY") were used as a control group to account for any market factors that might influence key market quality indicators. The Exchange used data from January 3, 2022 through March 4, 2022 (the two-month period prior to the introduction of SPXW options with Tuesday expirations) and data

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37 The Exchange calculated for each of SPXW options (with Monday, Wednesday, and Friday expirations) and SPY Weekly options (with Monday, Wednesday, and Friday expirations) the daily time-weighted bid-ask spread on the Exchange during its regular trading hours session, adjusted for the difference in size between SPXW options and SPY options (SPXW options are approximately ten times the value of SPY options).

38 The Exchange calculated the volume-weighted average daily effective spread for simple trades for each of SPXW options (with Monday, Wednesday, and Friday expirations) and SPY Weekly options (with Monday, Wednesday, and Friday expirations) as twice the amount of the absolute value of the difference between an order execution price and the midpoint of the national best bid and offer at the time of execution, adjusted for the difference in size between SPXW options and SPY options.

39 For purposes of comparison, the Exchange paired SPXW options and SPY options with the same moneyness and same days to expiration.

from May 11, 2022 to July 10, 2022 (the two-month period following the introduction of SPXW options with Thursday expirations).[40] Given the time that as passed since the introduction of P.M.-settled SPX options, the Exchange is unable to analyze whether the introduction of PM-settled options SPX options significantly impacted the market quality of A.M.-settled SPX options. The Exchange believes analyzing whether the introduction of new SPXW P.M.-settled expirations (i.e., SPXW options with Tuesday and Thursday expirations) impacted the market quality of then-existing SPXW P.M.-settled expirations (i.e., SPXW options with Monday, Wednesday, and Friday expirations) provides a reasonable substitute to evaluate whether the introduction of P.M.-settled index options impacted the market quality of the SPX market when the pilot began.

As a result of this analysis, the Exchange believes the introduction of SPX options with Tuesday and Thursday options had no significant impact on the market quality of SPXW options with Monday, Wednesday, and Friday expirations. With respect to the majority of series analyzed, the Exchange observed no statistically significant difference in the bid-ask spread or the effective spread of the series in the period prior to introduction of the Tuesday and Thursday expirations and the period following the introduction of the Tuesday and Thursday expirations. While statistically insignificant, the Exchange notes that in many series, particularly as they were closer to expiration, the Exchange observed that the values of these spreads decreased during the period following the introduction of the Tuesday and Thursday expirations.[41]

To further note, given the significant changes in the closing procedures of the primary markets in recent decades, including considerable advances in trading systems and technology, the Exchange believes that the risks of any potential impact of P.M.-, cash-settled SPX options on the underlying cash markets are also de minimis.

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40 The Exchange observed comparable market volatility levels during the pre-intervention and post-intervention time ranges.

41 In any series in which the Exchange observed an increase in the market quality indicators, the Exchange notes any such increase was also statistically insignificant.

The Exchange proposes to make the SPXPM Program permanent as P.M.-settled index products, particularly SPX options, have become an integral part of the Exchange's product offerings, providing investors with greater trading opportunities and flexibility. As indicated by the significant growth in the size of the market for P.M.-settled SPX options, such options have been, and continue to be, well-received and widely used by market participants. Therefore, the Exchange wishes to be able to continue to provide investors with the ability to trade SPXPM options on a permanent basis. The Exchange believes that the permanent continuation of the SPXPM Program will serve to maintain the status quo by continuing to offer a product to which investors have become accustomed and have incorporated into their business models and day-to-day trading methodologies for nearly ten years. As such, the Exchange also believes that ceasing to offer SPXPM options may result in significant market disruption and investor confusion. The Exchange has not identified any significant impact on market quality nor any unique or prohibitive regulatory concerns as a result of the SPXPM Pilot Program, and, as such, the Exchange believes that the continuation of the SPXPM Program as a pilot, including the use of time and resources to compile and analyze quarterly and annual pilot reports and pilot data, is no longer necessary and that making the SPXPM Program permanent will allow the Exchange to otherwise allocate time and resources to other industry initiatives.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Securities Exchange Act of 1934 (the "Act") and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[42] Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[43] requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and

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42 15 U.S.C. 78f(b).

43 15 U.S.C. 78f(b)(5).

coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, 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 particular, the Exchange believes that the making the SPXPM Program permanent will allow the Exchange to be able to continue to offer SPXPM options – a product of which has become an integral part of the Exchange's offerings – on a continuous and permanent basis. Since their reintroduction beginning in 2006,[44] P.M.-settled SPX options have been, and continue to be, well-received and widely used by market participants, providing investors with greater trading opportunities and flexibility. The Exchange believes that the permanent continuation of the SPXPM Program will remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, protect investors and the public interest by continuing to offer a product to which investors have become accustomed and have incorporated into their business models and day-to-day trading strategies for nearly nine years. As indicated by the significant growth in the size of the market for P.M.-settled SPX options, such options have been, and continue to be, well-received and widely used by market participants. Conversely, the Exchange believes ceasing to offer the SPXPM Program may result in significant market disruption and investor confusion, as P.M.-settled index products, particularly SPX options, have become an integral part of the Exchange's product offerings, providing investors with greater trading opportunities and flexibility.

The Exchange further believes that making the SPXPM Program permanent will remove impediments to and perfect the mechanism of a free and open market and a national market system and protect investors, while maintaining a fair and orderly market, as the Exchange believes that previous concerns (arising in the 1980s) regarding options expirations potentially

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44 See supra notes 21 – 24. As described above, the Exchange's conclusion is consistent with the analysis in the DERA Staff PM Pilot Memo.

contributing to excess volatility and reversals around the close have been adequately diminished. As described in detail above, the Exchange has observed no significant adverse market impact or identified any meaningful regulatory concerns during the nearly nine-year operation of the SPXPM Program as a pilot nor during the 15 years since P.M.-settled SPX options were reintroduced to the marketplace.[45] Notably, the Exchange did not identify any significant economic impact (including on pricing or volatility or in connection with reversals) on S&P 500 futures, the S&P 500, or the underlying component securities of the S&P 500 surrounding the close as a result of the quantity of P.M.-settled SPX options that settle at the close or the amount of expiring open interest in P.M.-settled SPX options, nor any demonstrated capacity for options hedging activity to impact volatility in the underlying markets. The Exchange also believes the introduction of P.M.-settled SPX options had no significant impact on the market quality of A.M.-settled SPX options or other options. The Exchange believes this as a result of its analysis conducted after the introduction of SPXW options with Tuesday and Thursday expirations, which demonstrated no statistically significant impact on the bid-ask or effective spreads of SPXW options with Monday, Wednesday, and Friday expirations after trading in the SPXW options with Tuesday and Thursday expirations began. While SPXW options are P.M.-settled and SPX options are A.M.-settled, they are otherwise nearly identical products. Therefore, the Exchange believes analyzing the impact of new SPXW options on then-existing SPXW options permit the Exchange to extrapolate from this data that it is unlikely the introduction of P.M.-settled SPXW options significantly impacted the market quality of A.M.-settled SPX options when the pilot began. Additionally, the significant changes in the closing procedures of the primary markets in recent decades, including considerable advances in trading systems and technology, has significantly minimized risks of any potential impact of P.M.-, cash-settled SPX options on the underlying cash markets. As such, the Exchange believes that a permanent

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45 See supra notes 21 – 24.

SPXPM Program does not raise any unique or prohibitive regulatory concerns and that such trading has not, and will not, adversely impact fair and orderly markets on Expiration Fridays for the S&P 500 and its component securities. Further, as the Exchange has not identified any significant impact on market quality or any unique or prohibitive regulatory concerns as a result of offering SPXPM options, the Exchange believes that the continuation of the SPXPM Program as a pilot, including the gathering, submission and review of the pilot reports and data, is no longer necessary and that making the SPXPM Program permanent will allow the Exchange to otherwise allocate time and resources to other industry initiatives.

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

Cboe Options does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The Exchange does not believe that making the SPXPM Program permanent will impose any unnecessary or inappropriate burden on intramarket competition because SPXPM options will continue to be available to all market participants who wish to participate in the SPXPM options market. The Exchange believes that the significant and sustained growth the P.M.-settled SPX options market has experienced since their reintroduction through pilot programs indicates strong, continued investor interest and demand, warranting a permanent SPXPM Program. The Exchange believes that, for the period that P.M.-settled SPX options have been in operation as pilot programs, they have provided investors with a desirable product with which to trade and wishes to permanently offer this product to investors. Furthermore, during the pilot period, the Exchange has not observed any significant adverse market effects nor identified any regulatory concerns as a result of the SPXPM Program, and, as such, the continuation of the SPXPM Program as a pilot, including the gathering, submission and review of the pilot reports and data, is no longer necessary — a permanent SPXPM Program will allow the Exchange to otherwise allocate time and resources to other industry initiatives.

The Exchange further does not believe that making the SPXPM Program permanent will impose any burden on intermarket competition that is not necessary or appropriate in furtherance of the purposes of the Act because it applies to a class of options listed only for trading on Cboe Options. The Exchange notes that other exchanges are free to and do offer competing products. To the extent that the permanent offering and continued trading of SPXPM options may make Cboe Options a more attractive marketplace to market participants at other exchanges, such market participants may elect to become Cboe Options market participants.

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

The Exchange neither solicited nor received comments on the proposed rule change.

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

Within 45 days of the date of publication of this notice in the Federal Register or within such longer period up to 90 days (i) as the Commission may designate if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the Exchange consents, the Commission will:

A. by order approve or disapprove such proposed rule change, or

B. institute proceedings to determine whether the proposed rule change should be 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 e-mail to rule-comments@sec.gov. Please include File Number SR-CBOE-2023-005 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-CBOE-2023-005. This file number should be included on the subject line if e-mail 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-CBOE-2023-005, and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[46]

Sherry R. Haywood,

Assistant Secretary.

[FR Doc. 2023-01260 Filed: 1/23/2023 8:45 am; Publication Date: 1/24/2023]

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46 17 CFR 200.30-3(a)(12).