

SECURITIES AND EXCHANGE COMMISSION  
(Release No. 34-102203; File Nos. SR-OCC-2024-016)

January 15, 2025

Self-Regulatory Organizations; The Options Clearing Corporation; Order Granting Approval of Proposed Rule Change by The Options Clearing Corporation Concerning Enhancements to the System for Theoretical Analysis and Numerical Simulations (“STANS”) and OCC’s Comprehensive Stress Testing (“CST”) Methodology, to Better Capture the Risks Associated with Short-dated Options

## I. INTRODUCTION

On November 22, 2024, the Options Clearing Corporation (“OCC”) filed with the Securities and Exchange Commission (“Commission”) the proposed rule change SR-OCC-2024-016, pursuant to Section 19(b) of the Securities Exchange Act of 1934 (“Exchange Act”)<sup>1</sup> and Rule 19b-4<sup>2</sup> thereunder, to (i) align assumptions across models and (ii) generate implied volatility shocks for options with a tenor of less than one month that are consistent with observed market dynamics.<sup>3</sup> The proposed rule change was published for public comment in the *Federal Register* on December 6, 2024.<sup>4</sup> The Commission has received no comments regarding the proposed rule change. For the reasons discussed below, the Commission is approving the proposed rule change (hereinafter defined as “Proposed Rule Change”).

## II. BACKGROUND

OCC is a central counterparty (“CCP”), which means that as part of its function as a clearing agency, it interposes itself as the buyer to every seller and the seller to every buyer for financial transactions. As the CCP for the listed options markets and for certain futures in the

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<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

<sup>3</sup> See Notice of Filing *infra* note 4, at 89 FR 97131.

<sup>4</sup> See Securities Exchange Act Release No. 101780 (Dec. 2, 2024), 89 FR 97131 (Dec. 6, 2024) (File No. SR-OCC-2024-016) (“Notice of Filing”).

United States, OCC is exposed to the risk that one or more of its Clearing Members may fail to make a payment or to deliver securities. OCC addresses such risk exposure, in part, by requiring its members to provide collateral, including both margin collateral and Clearing Fund collateral. Margin is the collateral that CCPs collect to cover potential changes in a member's positions over a set period of time during normal market conditions. OCC's Clearing Fund is a mutualized pool of financial resources to which each Clearing Member is required to contribute to ensure that OCC maintains sufficient qualifying liquid resources to manage its liquidity risk, and to address the tail risk that the margin collateral OCC collects from each Clearing Member might be insufficient to cover OCC's credit exposure to a defaulting member in extreme but plausible market conditions.

OCC's methodology for calculating margin collateral requirements is called the System for Theoretical Analysis and Numerical Simulations ("STANS").<sup>5</sup> OCC's methodology for sizing and monitoring its Clearing Fund is called the Comprehensive Stress Testing ("CST") methodology. OCC relies on STANS and the CST methodology to set collateral requirements to cover the financial risk posed by the positions OCC clears for its members. OCC states that the proportion of such positions that comprise short-dated options ("SDOs")<sup>6</sup> has increased over the past several years.<sup>7</sup> In response to this observation, OCC examined the risks posed by the increase in SDO trading and identified opportunities to improve the performance of the models comprising STANS and the CST methodology in covering the financial risk posed by the

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<sup>5</sup> Capitalized terms used but not defined herein have the meanings specified in OCC's Rules and By-Laws, available at <https://www.theocc.com/about/publications/bylaws.jsp>.

<sup>6</sup> SDOs are option contracts with a maturity of less than or equal to one month to expiration. See Notice of Filing, 89 FR at 97132.

<sup>7</sup> See Notice of Filing, 89 FR at 97132 (citing Cboe, *The Rise of SPX & 0DTE Options* (July 27, 2023), available at <https://go.cboe.com/1/77532/2023-07-27/ffc83k>).

increase in SDO trading observed by OCC.<sup>8</sup> As described below, OCC proposes two changes to the models comprising STANS and the CST methodology: one set of changes related to the day count conventions<sup>9</sup> and one set of changes related to the application of volatility shocks to theoretical option prices.<sup>10</sup>

*Day count conventions.* The models supporting STANS and CST rely on two different day count conventions. Specifically, OCC's option price smoothing process uses calendar day convention, and OCC's implied volatility simulation uses trading day convention. OCC asserts that the usage of two different day count conventions results in differences in implied volatility, especially when non-trading days make up a large portion of the time-to-expiration (*e.g.*, on Fridays for options that expire the following Monday),<sup>11</sup> which is more pronounced in SDOs.<sup>12</sup>

OCC proposes to address the misalignment of day count conventions used in the models underlying both STANS and the CST methodology by processing data through a series of conversions to ensure that the data presented to the price smoothing and volatility simulation models is consistent with the assumptions of those models. Specifically, OCC would convert implied volatility data into a trading day convention before feeding that data into OCC's implied volatility simulation models. OCC would then convert the output of its implied volatility

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<sup>8</sup> See Notice of Filing, 89 FR at 97132 (stating that “opportunities exist to improve model performance for Clearing Member portfolios dominated by SDOs”).

<sup>9</sup> OCC uses the term “day count convention” to refer to a standardized methodology for calculating the number of days between two dates. See Notice of Filing, 89 FR at 97132, note 13. Both calendar and business day conventions are used by OCC in STANS and CST calculations. *Id.*

<sup>10</sup> The implied volatility of an option is a measure of the expected future volatility of the option's underlying security at expiration, which is reflected in the current option premium in the market. See Notice of Filing, 89 FR at 97132, note 12.

<sup>11</sup> See Notice of Filing, 89 FR at 97132.

<sup>12</sup> OCC states that SDOs are more sensitive to day-count convention alignment than contracts with longer expirations due to the proportionally larger difference in time to expiry between the trading day convention and calendar day convention for shorter dated tenors. See Notice of Filing, 89 FR at 97133.

simulation models back into a calendar day convention before feeding those results into OCC's price smoothing process.

*Volatility shocks.* OCC's model for simulating theoretical prices assumes that the implied volatility shocks of the one-month tenor ("1M") are sufficient to cover the implied volatility changes for SDO tenors.<sup>13</sup> As constructed, the models underlying both STANS and the CST methodology impose the same volatility shocks applied to 1M options to all options with tenors of less than one month. However, changes in implied volatility for SDOs can be much larger than the changes observed in 1M options.<sup>14</sup>

OCC proposes to estimate implied volatility shocks specific to options with a shorter tenor than 1M options rather than imposing the same shock on all options with one month or less to maturity. Within STANS, OCC proposes to derive the shocks for SDOs from the shock applied to 1M options. Specifically, OCC would derive the shocks for such options through the application of a square-root decay to the 1M option volatility.<sup>15</sup> Within the CST methodology, OCC proposes to extend its existing processes for establishing implied volatility shocks to specific maturities that are less than one month (*i.e.*, two weeks, one week) and to rely on linear interpolation to establish shocks for even shorter maturities (*i.e.*, down to three days).

OCC summarized the potential impacts of the proposed changes to both margin and Clearing Fund requirements based on data from July 2023 to September 2024.<sup>16</sup> For margin, OCC observed that the proposed changes would have caused an increase in average daily margin

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<sup>13</sup> The "tenor" of an option is the amount of time remaining until its expiration or maturity. *See* Notice of Filing, 89 FR at 97132, note 14.

<sup>14</sup> OCC has observed that the day-over-day at the money implied volatility changes for the options with a one-week tenor are approximately twice that of the 1M tenor on certain risk factors such as SPX, RUT, QQQ, AAPL, and TSLA. *See* Notice of Filing, 89 FR at 97132, note 15.

<sup>15</sup> *See* Notice of Filing, 89 FR at 97135.

<sup>16</sup> *See* Notice of Filing, 89 FR at 97136.

requirements of 0.58 percent with the daily impacts ranging from a 0.81 percent decrease to a 3.21 percent increase.<sup>17</sup> For the Clearing Fund, OCC observed that the proposed changes would have caused the total Clearing Fund to decrease by 0.14 percent.<sup>18</sup>

### **III. DISCUSSION AND COMMISSION FINDINGS**

Section 19(b)(2)(C) of the Exchange Act directs the Commission to approve a proposed rule change of a self-regulatory organization if it finds that such proposed rule change is consistent with the requirements of the Exchange Act and the rules and regulations thereunder applicable to such organization.<sup>19</sup> Under the Commission’s Rules of Practice, the “burden to demonstrate that a proposed rule change is consistent with the Exchange Act and the rules and regulations issued thereunder . . . is on the self-regulatory organization [‘SRO’] that proposed the rule change.”<sup>20</sup>

The description of a proposed rule change, its purpose and operation, its effect, and a legal analysis of its consistency with applicable requirements must all be sufficiently detailed and specific to support an affirmative Commission finding,<sup>21</sup> and any failure of an SRO to provide this information may result in the Commission not having a sufficient basis to make an affirmative finding that a proposed rule change is consistent with the Exchange Act and the applicable rules and regulations.<sup>22</sup> Moreover, “unquestioning reliance” on an SRO’s

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<sup>17</sup> *Id.*

<sup>18</sup> *Id.*

<sup>19</sup> 15 U.S.C. 78s(b)(2)(C).

<sup>20</sup> Rule 700(b)(3), Commission Rules of Practice, 17 CFR 201.700(b)(3).

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

representations in a proposed rule change is not sufficient to justify Commission approval of a proposed rule change.<sup>23</sup>

After carefully considering the Proposed Rule Change, the Commission finds that the Proposed Rule Change is consistent with the requirements of the Exchange Act and the rules and regulations thereunder applicable to OCC. More specifically, the Commission finds that the Proposed Rule Change is consistent with Exchange Act Rules 17Ad-22(e)(4)<sup>24</sup> and 17Ad-22(e)(6),<sup>25</sup> and with Section 17A(b)(3)(F) of the Exchange Act,<sup>26</sup> as described in detail below.

A. *Consistency with Rules 17Ad-22(e)(4) and (6) under the Exchange Act*

Rule 17Ad-22(e)(4) under the Exchange Act requires that a covered clearing agency establish, implement, maintain, and enforce written policies and procedures reasonably designed to effectively identify, measure, monitor, and manage its credit risk exposures to participants and those arising from payment clearing, and settlement processes by, in part, testing the sufficiency of its financial resources available to meet the minimum standards under Rules 17Ad-22(e)(4)(i) through (iii), as applicable.<sup>27</sup> Rule 17Ad-22(e)(6) under the Exchange Act requires that a covered clearing agency establish, implement, maintain, and enforce written policies and procedures reasonably designed to cover, if the covered clearing agency provides central counterparty services, its credit exposures to its participants by establishing a risk-based margin system that, among other things, considers, and produces margin levels commensurate with, the

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<sup>23</sup> *Susquehanna Int'l Group, LLP v. Securities and Exchange Commission*, 866 F.3d 442, 447 (D.C. Cir. 2017).

<sup>24</sup> 17 CFR 240.17Ad-22(e)(4).

<sup>25</sup> 17 CFR 240.17Ad-22(e)(6).

<sup>26</sup> 15 U.S.C. 78q-1(b)(3)(F).

<sup>27</sup> 17 CFR 240.17Ad-22(e)(4)(vi).

risks and particular attributes of each relevant product, portfolio, and market.<sup>28</sup> Based on the review of the record, and for the reasons described below, OCC's proposed update to STANS and the CST methodology in the manner described above is consistent with Rules 17Ad-22(e)(4) and (6).

As described above, OCC proposes changes to both its margin methodology (STANS) and stress testing (CST) methodology. The proposed changes would resolve inconsistent model assumptions by aligning the day count convention across models. The proposed changes would also provide for implied volatility shocks to options with tenors of less than one month that are consistent with historical evidence, rather than simply applying the shocks generated for 1M options. Each of the proposed changes is designed to more accurately reflect the particular attributes of the options OCC clears. In the context of STANS, therefore, the proposed changes would support the production of margining requirements consistent with such attributes. In the context of OCC's CST methodology, the changes would provide a more accurate basis on which to test the sufficiency of OCC's financial resources.

Accordingly, the Proposed Rule Change is consistent with Rules 17Ad-22(e)(4) and (6) under the Exchange Act.<sup>29</sup>

B. *Consistency with Section 17A(b)(3)(F) of the Exchange Act*

Section 17A(b)(3)(F) of the Exchange Act requires, among other things, that the rules of a clearing agency be designed to assure the safeguarding of securities and funds which are in the custody or control of the clearing agency or for which it is responsible.<sup>30</sup> As discussed above, the proposed changes would improve the performance of the models comprising STANS and the

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<sup>28</sup> 17 CFR 240.17Ad-22(e)(6)(i).

<sup>29</sup> 17 CFR 240.17Ad-22(e)(4) and 17 CFR 240.17Ad-22(e)(6).

<sup>30</sup> 15 U.S.C. 78q-1(b)(3)(F).

CST methodology by, among other things, supporting the production of margining requirements consistent with the particular attributes of the products that OCC clears and providing a more accurate basis on which to test the sufficiency of OCC's financial resources. These changes will, in turn, help ensure that OCC collects appropriate Clearing Fund collateral and reduce the likelihood that OCC would need to utilize Clearing Fund collateral of non-defaulting clearing members in the event of a default. For these reasons, OCC's proposed update to its Margin Policy in the manner described above is consistent with the safeguarding of securities and funds which are in OCC's custody or control or for which it is responsible. Accordingly, the Proposed Rule Change is consistent with the requirements of Section 17A(b)(3)(F) of the Exchange Act.<sup>31</sup>

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<sup>31</sup> 15 U.S.C. 78q-1(b)(3)(F).



#### IV. CONCLUSION

On the basis of the foregoing, the Commission finds that the Proposed Rule Change is consistent with the requirements of the Exchange Act, and in particular, the requirements of Section 17A of the Exchange Act<sup>32</sup> and the rules and regulations thereunder.

IT IS THEREFORE ORDERED, pursuant to Section 19(b)(2) of the Exchange Act,<sup>33</sup> that the Proposed Rule Change (SR-OCC-2024-016) be, and hereby is, approved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>34</sup>

**Sherry R. Haywood,**

*Assistant Secretary.*

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<sup>32</sup> In approving the Proposed Rule Change, the Commission has considered the proposed rules' impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

<sup>33</sup> 15 U.S.C. 78s(b)(2).

<sup>34</sup> 17 CFR 200.30-3(a)(12).