THE FOUNDATION FOR SECURE MARKETS

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March 19, 2019

VIA ELECTRONIC MAIL
Christopher J. Kirkpatrick
Office of the Secretariat
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, N.W.
Washington, DC 20581

Re: Rule Filing SR-OCC-2019-002 Rule Certification

Dear Secretary Kirkpatrick:

Pursuant to Section 5c(c)(1) of the Commodity Exchange Act, as amended ("Act"), and Commodity Futures Trading Commission ("CFTC") Regulation 40.6, enclosed is a copy of the above-referenced rule filing submitted by The Options Clearing Corporation ("OCC"). The date of implementation of the rule is at least 10 business days following receipt of the rule filing by the CFTC or the date the proposed rule is approved by the Securities and Exchange Commission ("SEC") or otherwise becomes effective under the Securities Exchange Act of 1934 (the "Exchange Act"). This rule filing has been submitted to the SEC under the Exchange Act.

OCC has requested confidential treatment for Exhibits 3 and 5 to SR-OCC-2019-002 (pages 45-49 and pages 50-97 of SR-OCC-2019-002).

In conformity with the requirements of Regulation 40.6(a)(7), OCC states the following:

Explanation and Analysis

The purpose of this proposed rule change is to modify OCC's margin methodology for futures on indexes designed to measure volatilities implied by prices of options on a particular underlying interest (such indexes being "Volatility Indexes," and futures contracts on such Volatility Indexes being "Volatility Index Futures"). The proposed methodology enhancements for Volatility Index Futures would include: (1) introducing "synthetic" futures (discussed below) into the daily re-estimation of prices and correlations for Volatility Index Futures; (2) an enhanced statistical distribution for modeling price returns of the "synthetic" futures; and (3) a new anti-procyclical floor for variance estimates.

The proposed changes to OCC's Margins Methodology document are contained in confidential Exhibit 5 of the filing. Material proposed to be added is marked by underlining and material proposed to be deleted is marked by strikethrough text. OCC also has included backtesting and impact analysis of the proposed model changes in confidential Exhibit 3. The proposed rule

change does not require any changes to the text of OCC's By-Laws or Rules. All terms with initial capitalization that are not otherwise defined herein have the same meaning as set forth in the OCC By-Laws and Rules.[1]

Background

OCC's margin methodology, the System for Theoretical Analysis and Numerical Simulations ("STANS"),[2] is OCC's proprietary risk management system that calculates Clearing Member margin requirements. STANS utilizes large-scale Monte Carlo simulations to forecast price and volatility movements in determining a Clearing Member's margin requirement.[3] The STANS margin requirement is calculated at the portfolio level of Clearing Member accounts with positions in marginable securities. The STANS margin requirement consists of an estimate of a 99% expected shortfall[4] over a two-day time horizon and an add-on margin charge for model risk (the concentration/dependence stress test charge).[5] The STANS methodology is used to measure the exposure of portfolios of options, futures and cash instruments, including the Volatility Index Futures cleared by OCC.[6]

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1 OCC's By-Laws and Rules can be found on OCC's public website: http://optionsclearing.com/about/publications/bylaws.jsp.

2 See Securities Exchange Act Release No. 53322 (February 15, 2006), 71 FR 9403 (February 23, 2006) (SR-OCC-2004-20).

3 See OCC Rule 601.

4 The expected shortfall component is established as the estimated average of potential losses higher than the 99% value at risk threshold. The term "value at risk" or "VaR" refers to a statistical technique that, generally speaking, is used in risk management to measure the potential risk of loss for a given set of assets over a particular time horizon.

5 A detailed description of the STANS methodology is available at http://optionsclearing.com/risk-management/margins/.

6 Pursuant to OCC Rule 601(e)(1), OCC also calculates initial margin requirements for segregated futures accounts on a gross basis using the Standard Portfolio Analysis of Risk Margin Calculation System ("SPAN"). CFTC Regulation 39.13(g)(8), requires, in relevant part, that derivatives clearing organizations ("DCOs") collect initial margin for customer segregated futures accounts on a gross basis. While OCC uses SPAN to calculate initial margin requirements for segregated futures accounts on a gross basis, OCC believes that margin requirements calculated on a net basis (i.e., permitting offsets between different customers' positions held by a Clearing Member in a segregated futures account using STANS) affords OCC additional protections at the clearinghouse level against risks associated with liquidating a Clearing Member's segregated futures account. As a result, OCC calculates margin requirements for segregated futures accounts using both SPAN on a gross basis and STANS on a net basis, and if at any time OCC staff observes a segregated futures account where initial margin calculated pursuant to STANS on a net basis exceeds the initial margin calculated pursuant to SPAN on a gross basis, OCC collateralizes this risk exposure by applying an additional margin charge in the amount of such difference to the account. See Securities Exchange Act Release No. 72331 (June 5, 2014), 79 FR 33607 (June 11, 2014) (SR-OCC-2014-13).

Volatility Indexes are indexes designed to measure the volatility that is implied by the prices of options on a particular reference index or asset. For example, the Cboe Volatility Index ("VIX") is an index designed to measure the 30-day expected volatility of the Standard & Poor's 500 index ("SPX").[7] OCC currently clears futures contracts on such Volatility Indexes. These Volatility Index Futures contracts can consequently be viewed as an indication of the market's future expectations of the volatility of a given Volatility Index's underlying reference index (e.g., in the case of the VIX, providing a snapshot of the expected market volatility of the underlying over the term of the options making up the index).

Current Model for Volatility Index Futures

Under OCC's existing margin methodology, OCC models the potential final settlement prices of Volatility Index Futures using the underlying index as the risk factor.[8] Final settlement prices are simulated under the assumption that the logarithm of the values of the risk factor (i.e., the underlying spot Volatility Index) follows a mean-reverting[9] random walk[10] with normally-distributed steps.[11] The model is designed to calibrate the distribution that defines this mean-reversion behavior so that the expected final settlement prices of the futures match their currently-observed market prices to ensure that margin coverage is sufficient to limit credit exposures to OCC's participants under normal market conditions. OCC recalculates the Monte Carlo scenarios of the returns of each futures series over its remaining life so that the standard deviation of the scenarios matches two days' worth of the implied volatility of near-the-money and contemporaneously expiring options on the Volatility Index, where available, in order to align with OCC's two-day liquidation period assumption. Currently, the calibration for the distribution is performed on a daily basis.

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7 Generally speaking, the implied volatility of an option is a measure of the expected future volatility of the value of the option's annualized standard deviation of the price of the underlying security, index, or future at exercise, which is reflected in the current option premium in the market. Using the Black-Scholes options pricing model, the implied volatility is the standard deviation of the underlying asset price necessary to arrive at the market price of an option of a given strike, time to maturity, underlying asset price and given the current risk-free rate. In effect, the implied volatility is responsible for that portion of the premium that cannot be explained by the then-current intrinsic value (i.e., the difference between the price of the underlying and the exercise price of the option) of the option, discounted to reflect its time value.

8 A "risk factor" within OCC's margin system may be defined as a product or attribute whose historical data is used to estimate and simulate the risk for an associated product.

9 In finance, the term "mean reversion" describes a financial time series in which returns can be very unstable in the short run but very stable in the long run.

10 A "random walk" is a continuous process with random increments drawn independently from a particular distribution.

11 This is known as a Gaussian Ornstein-Uhlenbeck process. See Uhlenbeck, G. E. and L.S. Ornstein, "On the Theory of Brownian Motion," Physical Review, 36, 823-841 (1930) (explaining the Gaussian Ornstein-Uhlenbeck process).

OCC's current model for Volatility Index Futures, which utilizes the underlying Volatility Index as the sole risk factor, is subject to certain limitations, which would be addressed by the proposed changes described herein. Volatility Indexes, unlike futures contracts, are not investible (i.e., they cannot be replicated by static portfolios of traded contracts). In addition, the futures market has a term structure that cannot be modeled using just the underlying index. Finally, futures on a Volatility Index are less volatile and less fat-tailed[12] than the index itself, and these features are term-dependent. The current model was developed before sufficient data on the futures was available, so a model based on "synthetic" futures,[13] as proposed herein, was not an option at the time. Also, the current model does not account for certain strategies Clearing Members might employ involving spreads between delivery dates, which may result in under-margining of those positions.

In recent years, OCC has seen significant growth in trading volume for Volatility Index Futures. As a result, OCC is proposing a number of enhancements to its margin methodology designed to provide for more accurate and responsive margin requirements for Volatility Index Futures.

Proposed Changes

The purpose of the proposed rule change is to introduce enhancements to OCC's margin methodology so that OCC's margin models reflect more current market information for Volatility Index Futures, introduce asymmetry into the statistical distribution used to model price returns of the "synthetic" futures, and reduce procyclicality[14] in the model.

The proposed changes would specifically include: (1) the daily re-estimation of prices and correlations using "synthetic" futures; (2) an enhanced statistical distribution for modeling price returns for "synthetic" futures; and (3) a new anti-procyclical floor for variance estimates.[15] The main feature of the proposed model, relative to the current model, is the replacement of the underlying Volatility Index itself as a risk factor by risk factors that are based on observed futures

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12 A data set with a "fat tail" is one in which extreme price returns have a higher probability of occurrence than would be the case in a normal distribution.

13 As discussed in further detail below, a "synthetic" futures time series, for the intended purposes of OCC, relates to a uniform substitute for a time series of daily settlement prices for actual futures contracts, which persists over many expiration cycles and thus can be used as a basis for econometric analysis.

14 A quality that is positively correlated with the overall state of the market is deemed to be "procyclical." For example, procyclicality may be evidenced by increasing margin or Clearing Fund requirements in times of stressed market conditions and low margin or Clearing Fund requirements when markets are calm. Hence, anti-procyclical features in a model are measures intended to prevent risk-based models from fluctuating too drastically in response to changing market conditions.

15 OCC would also make a number of conforming changes throughout it Margins Methodology so that the document arcuately reflects the adoption of the new model.

prices (i.e., the "synthetic" futures contracts). The proposed change would introduce a new set of risk factors and method for generating scenarios for those risk factors, and hence Volatility Index Futures settlement prices, to be incorporated into the STANS margin calculations. OCC believes its proposed methodology would provide for more accurate and responsive margin requirements and that the imposition of a floor for variance estimates would mitigate procyclicality in OCC's margin methodology for Volatility Index Futures. The proposed changes are described in further detail below.

1. Daily Re-Estimations Using Synthetic Futures

As noted above, OCC currently models the potential final settlement prices of Volatility Index Futures based on the underlying index itself. OCC proposes to modify its modeling approach for Volatility Index Futures by modeling the price distributions of "synthetic" futures on a daily basis based on the historical returns of futures contracts with approximately the same tenor (as opposed to OCC's current approach of calibrating the distribution based on the Volatility Index itself). A "synthetic" futures time series for the intended purposes of OCC relates to a uniform substitute for a time series of daily settlement prices for actual futures contracts, which persists over many expiration cycles and thus can be used as a basis for econometric analysis. One feature of futures contracts is that each contract may have a different expiration date, and at any one point in time there may be a variety of futures contracts on the same underlying interest, all with varying dates of expiry, so that there is no one continuous time series for those futures. "Synthetic" futures can be used to generate a continuous time series of futures contract prices across multiple expirations. These "synthetic" futures price return histories would be inputted into the existing Copula simulation process in STANS alongside the underlying interests of OCC's other cleared and cross-margin products and collateral. The purpose of this use of "synthetic" futures is to allow the margin system to better approximate correlations between futures contracts of different tenors by creating more price data points and their margin offsets.

Under the proposal, the historical "synthetic" time series for these Volatility Indexes would be updated daily and mapped to their corresponding futures contracts. By construction, the first "synthetic" time series would always contain returns of the front contract (i.e., the contract closest to maturity, on any given day), the second, which would correspond to the next month out, and the remaining series would follow the same pattern. Following the expiration date of the front contract, each contract within a time series would be replaced with a contract maturing one month later. While "synthetic" time series contain returns from different contracts, a return on any given date is constructed from prices of the same contract (e.g., as the front month futures contract "rolls" from the current month to the subsequent month, returns on the roll date would be constructed by using the same contract and not by calculating returns across months). The marginal probability distribution parameters for the "synthetic" time series (i.e., marginal probabilities of various values of the variables in the distribution without reference to the values of the other variables) would be

estimated daily using recent historical observations.[16] In cases in which the GARCH variance[17] forecast falls below the sample variance, in addition to being floored by the sample variance, the "synthetic" time series would additionally be "scaled up" through the introduction of a new floor on variance estimates based on the corresponding underlying index in order to reduce procyclicality in the model (as discussed in further detail below).

OCC believes that using synthetic futures in its daily re-estimation process would allow OCC's econometric model for Volatility Index Futures to reflect more current market information and achieve better coverage across the term curve.[18] As a result, OCC believes the proposed changes would result more accurate margin requirements for Clearing Members under the current market conditions.

2. Enhancements to Statistical Distribution for Volatility Index Futures

In addition to using a "synthetic" futures price return history in the process for daily re-estimation of model parameters, OCC is proposing additional enhancements to its margin methodology for Volatility Index Futures to introduce asymmetry into the statistical distribution used to model price returns of the "synthetic" futures. The econometric model currently used in STANS for all price risk factors is an asymmetric GARCH(1,1) with symmetric Standardized Normal Reciprocal Inverse Gaussian (or "NRIG")-distributed logarithmic returns.[19] OCC proposes to move to an asymmetric NRIG distribution for purposes of modeling proportionate returns of the

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16 However, for any tenor extension or new contract that does not have enough historical data for the associated "synthetic" security, the scenarios for the longest tenor "synthetic" with enough history would be used as a proxy for generating futures theoretical price scenarios. In this case, the long run floor (discussed below) would be borrowed from the proxy "synthetic."

17 See generally Tim Bollerslev, "Generalized Autoregressive Conditional Heteroskedasticity," Journal of Econometrics, 31(3), 307-327 (1986). The acronym "GARCH" refers to an econometric model that can be used to estimate volatility based on historical data. The general distinction between the "GARCH variance" and the "sample variance" for a given time series is that the GARCH variance uses the underlying time series data to forecast volatility.

18 In 2018, OCC implemented proposed changes to its margin methodology designed to enable OCC to: (1) obtain daily price data for equity products for use in the daily estimation of econometric model parameters; (2) enhance OCC's econometric model for updating statistical parameters for all risk factors that reflect the most recent data obtained; (3) improve the sensitivity and stability of correlation estimates across risk factors by using de-volatized returns; and (4) improve OCC's methodology related to the treatment of defaulting securities. See Securities Exchange Act Release No. 83326 (May 24, 2018), 83 FR 25081 (May 31, 2018) (SR-OCC-2017-022) and Securities Exchange Act Release No. 83305 (May 23, 2018), 83 FR 24536 (May 29, 2018) (SR-OCC-2017-811). Under the proposal, correlation updates for "synthetic" futures would be done daily with a one-day lag.

19 See id.

"synthetic" futures. OCC believes the asymmetric NRIG distribution has a better "goodness of fit"[20] to the historical data and allows for more appropriate modeling of observed asymmetry of the distribution. As a result, OCC believes that the proposed change would lead to more consistent treatment of returns both on the upside as well as downside of the distribution. Accordingly, OCC believes that the proposed changes would result in margin requirements for Volatility Index Futures that respond more appropriately to changes in market volatility and therefore are more accurate.

3. Introduction of Anti-Procyclical Floor for Variance Estimates

OCC also proposes to introduce a new floor for variance estimates of the Volatility Index Futures that would be modeled under the newly proposed approach to mitigate procyclicality in OCC's margin model. In order to incorporate a variance level implied by a longer time series of data, OCC would calculate a floor for variance estimates based on the underlying index (e.g., VIX) which is expected to have a longer history that is more reflective of the long-run variance level that cannot be otherwise captured using the "synthetic" futures data. The floor would therefore reduce the impact of a sudden increase in margin requirements from a low level and mitigate procyclicality in the model.

Clearing Member Outreach

In order to inform Clearing Members of the proposed change, OCC has provided updates to members at OCC Roundtable[21] and Financial Risk Advisory Council (or "FRAC")[22] meetings and will provide additional reminders about the proposed changes at its next FRAC meeting. In addition, OCC will publish an Information Memo to all Clearing Members describing the proposed changes and will provide additional periodic Information Memo updates prior to the implementation date. Additionally, OCC will perform targeted and direct outreach with Clearing Members that would be most impacted by the proposed change, and OCC would work closely with such Clearing Members to coordinate the implementation and to discuss the impact and timing of any required collateral deposits that may result from the proposed change.[23]

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20 The "goodness of fit" of a statistical model describes the extent to which observed data match the values generated by the model.

21 The OCC Roundtable was established to bring Clearing Members, exchanges and OCC together to discuss industry and operational issues. It is comprised of representatives of senior OCC staff, participant exchanges and Clearing Members, representing the diversity of OCC's membership in industry segments, OCC-cleared volume, business type, operational structure and geography.

22 The Financial Risk Advisory Council is a working group comprised of exchanges, Clearing Members and indirect participants of OCC.

23 Specifically, OCC will discuss with those Clearing Members how they plan to satisfy any increase in their margin requirements associated with the proposed change.

Implementation Timeframe

OCC plans to implement the proposed changes on May 20, 2019, provided that all necessary regulatory approvals are received by that date. If all regulatory approvals are not received by May 20, 2019, or if implementation on that date becomes otherwise impractical, OCC will implement the proposed changes within thirty (30) days after the date that OCC receives all necessary regulatory approvals for the proposed changes. OCC will announce any alternative implementation date of the proposed changes by an Information Memo posted to its public website at least one week prior to implementation.

OCC reviewed the DCO core principles ("Core Principles") as set forth in the Act. During this review, OCC identified the following Core Principles as potentially being impacted:

Risk Management. OCC believes that implementing the proposed rule change will be aligned with the requirements of Core Principle D.[24] Core Principle D requires, in part, that each DCO limit, through the use of margin and other risk control mechanisms, its potential losses from defaults by members and participants of the DCO to ensure that its operations would not be disrupted and that its non-defaulting members or participants are not exposed to losses they cannot anticipate or control.[25] Core Principle D further requires that each DCO have margin requirements sufficient to cover potential exposures in normal market conditions and that such margin requirements be set using risk-based models and parameters.[26]

As described above, the proposed rule change would introduce new margin model enhancements for OCC's cleared Volatility Index Futures. OCC would use the risk-based model enhancements described herein to measure its credit exposures to its participants on a daily basis and determine margin requirements based on such calculations. OCC believes that the proposed enhancements would result in more accurate and responsive margin requirements by ensuring that OCC's margin models reflect more current market information for Volatility Index Futures and achieve better coverage across the term curve. In addition, OCC believes that the use of an asymmetric distribution in its model would have a better "goodness of fit" to the historical data and allow for more appropriate modeling of observed asymmetry of the distribution. The proposed rule change would also introduce a new floor on variance estimates in the model to mitigate procyclicality. OCC believes the proposed rule change is therefore designed to ensure that OCC sets margin requirements that would serve to limit its exposures to potential losses from defaults by its participants under normal market conditions so that the operations of OCC would not be disrupted, and non-defaulting participants would not be exposed to losses that they cannot anticipate or control.

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24 7 U.S.C. 7a-1(c)(2)(D).

25 7 U.S.C. 7a-1(c)(2)(D)(iii).

26 7 U.S.C. 7a-1(c)(2)(D)(iv) - (v). CFTC Regulation 39.13(g)(2)(i) further implements Core Principle D by requiring, in part, that each DCO establish initial margin requirements that are commensurate with the risks of each product and portfolio, including any unusual characteristics of, or risks associated with, particular products or portfolios. See 17 CFR 39.13(g)(2)(i).

Moreover, OCC believes the proposed changes would provide for risk-based models and parameters that are reasonably designed to consider and produce margin levels commensurate with the risks and particular attributes of OCC's cleared Volatility Index Futures. In this way, OCC believes the proposed change promotes compliance with Core Principle D under the Act.[27]

Opposing Views

No opposing views were expressed related to the rule amendments.

Notice of Pending Rule Certification

OCC hereby certifies that notice of this rule filing has been be given to Clearing Members of OCC in compliance with Regulation 40.6(a)(2) by posting a copy of the submission on OCC's website concurrently with the filing of this submission.

[27] 7 U.S.C. 7a-1(c)(2)(D).

Certification

OCC hereby certifies that the rule set forth at Item 1 of the enclosed filings complies with the Act and the CFTC's regulations thereunder.

Should you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Justin W. Byrne
Vice President, Regulatory Filings

Enclosure(s)

OMB APPROVAL
OMB Number: 3235-0045 Estimated average burden hours per response.....38

Required fields are shown with yellow backgrounds and asterisks.

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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
Form 19b-4

File No.* SR - 2019 - * 002
Amendment No. (req. for Amendments *)

Filing by Options Clearing Corporation

Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

Initial * ☑ Amendment * ☐ Withdrawal ☐

Section 19(b)(2) * ☑ Section 19(b)(3)(A) * ☐ Section 19(b)(3)(B) * ☐

Pilot ☐

Extension of Time Period for Commission Action * ☐

Date Expires *

Rule

- 19b-4(f)(1)
- 19b-4(f)(2)
- 19b-4(f)(3)
- 19b-4(f)(4)
- 19b-4(f)(5)
- 19b-4(f)(6)

Notice of proposed change pursuant to the Payment, Clearing, and Settlement Act of 2010

Section 806(e)(1) * ☐ Section 806(e)(2) * ☐

Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934

Section 3C(b)(2) * ☐

Exhibit 2 Sent As Paper Document

Exhibit 3 Sent As Paper Document

Description

Provide a brief description of the action (limit 250 characters, required when Initial is checked *).

Proposed rule change related to The Options Clearing Corporation's margin methodology for Volatility Index Futures.

Contact Information

Provide the name, telephone number, and e-mail address of the person on the staff of the self-regulatory organization prepared to respond to questions and comments on the action.

First Name * Justin Last Name * Byrne

Title * Vice President, Regulatory Filings

E-mail * jbyrne@theocc.com

Telephone * (202) 971-7238 Fax (312) 322-6280

Signature

Pursuant to the requirements of the Securities Exchange Act of 1934,

has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

Date 03/18/2019

By Justin W. Byrne

(Name *)

(Title *)

Vice President, Regulatory Filings

NOTE: Clicking the button at right will digitally sign and lock this form. A digital signature is as legally binding as a physical signature, and once signed, this form cannot be changed.

Justin Byrne, jbyrne@theocc.com

Required fields are shown with yellow backgrounds and asterisks.

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

For complete Form 19b-4 instructions please refer to the EFFS website.

Form 19b-4 Information *

Add Remove View

The self-regulatory organization must provide all required information, presented in a clear and comprehensible manner, to enable the public to provide meaningful comment on the proposal and for the Commission to determine whether the proposal is consistent with the Act and applicable rules and regulations under the Act.

Exhibit 1 - Notice of Proposed Rule Change *

Add Remove View

The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO] -xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 1A- Notice of Proposed Rule Change, Security-Based Swap Submission, or Advance Notice by Clearing Agencies *

Add Remove View

The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO] -xx-xx). A material failure to comply with these guidelines will result in the proposed rule change, security-based swap submission, or advance notice being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 2 - Notices, Written Comments, Transcripts, Other Communications

Add Remove View

Exhibit Sent As Paper Document

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Copies of notices, written comments, transcripts, other communications. If such documents cannot be filed electronically in accordance with Instruction F, they shall be filed in accordance with Instruction G.

Exhibit 3 - Form, Report, or Questionnaire

Add Remove View

Exhibit Sent As Paper Document

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Copies of any form, report, or questionnaire that the self-regulatory organization proposes to use to help implement or operate the proposed rule change, or that is referred to by the proposed rule change.

Exhibit 4 - Marked Copies

Add Remove View

The full text shall be marked, in any convenient manner, to indicate additions to and deletions from the immediately preceding filing. The purpose of Exhibit 4 is to permit the staff to identify immediately the changes made from the text of the rule with which it has been working.

Exhibit 5 - Proposed Rule Text

Add Remove View

The self-regulatory organization may choose to attach as Exhibit 5 proposed changes to rule text in place of providing it in Item I and which may otherwise be more easily readable if provided separately from Form 19b-4. Exhibit 5 shall be considered part of the proposed rule change.

Partial Amendment

Add Remove View

If the self-regulatory organization is amending only part of the text of a lengthy proposed rule change, it may, with the Commission's permission, file only those portions of the text of the proposed rule change in which changes are being made if the filing (i.e. partial amendment) is clearly understandable on its face. Such partial amendment shall be clearly identified and marked to show deletions and additions.

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 19b-4

Proposed Rule Change
by

THE OPTIONS CLEARING CORPORATION

Pursuant to Rule 19b-4 under the
Securities Exchange Act of 1934

Item 1. Text of the Proposed Rule Change

Pursuant to the provisions of Section 19(b)(1) of the Securities Exchange Act of 1934 ("Exchange Act" or "Act"),[1] and Rule 19b-4 thereunder,[2] The Options Clearing Corporation ("OCC") is filing with the Securities and Exchange Commission ("SEC" or "Commission") a proposed rule change to modify OCC's margin methodology for futures on indexes designed to measure volatilities implied by prices of options on a particular underlying interest (such indexes being "Volatility Indexes," and futures contracts on such Volatility Indexes being "Volatility Index Futures"). The proposed methodology enhancements for Volatility Index Futures would include: (1) introducing "synthetic" futures (discussed below) into the daily re-estimation of prices and correlations for Volatility Index Futures; (2) an enhanced statistical distribution for modeling price returns of the "synthetic" futures; and (3) a new anti-procyclical floor for variance estimates. The proposed changes are discussed in detail in Item 3 below.

The proposed changes to OCC's Margins Methodology document are contained in confidential Exhibit 5 of the filing. Material proposed to be added is marked by underlining and material proposed to be deleted is marked by strikethrough text. OCC also has included backtesting and impact analysis of the proposed model changes in confidential Exhibit 3. The proposed rule change does not require any changes to the text of OCC's By-Laws or Rules. All terms with initial capitalization that are not otherwise defined herein have the same meaning as

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

2 17 CFR 240.19b-4.

set forth in the OCC By-Laws and Rules.[3]

Item 2. Procedures of the Self-Regulatory Organization

The proposed rule change was approved for filing with the Commission by the Board of Directors at a meeting held on March 6, 2014.

Questions should be addressed to Justin Byrne, Vice President, Regulatory Filings, at (202) 971-7238.

Item 3. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

A. Purpose

The purpose of the proposed rule change is to introduce enhancements to OCC's margin methodology for Volatility Index Futures so that OCC's margin model reflects more current market information for Volatility Index Futures and allows for more appropriate modeling of the risk attributes of such products. Specifically, the proposed methodology enhancements for Volatility Index Futures would include: (1) introducing "synthetic" futures into the process for daily re-estimation of prices and correlations for Volatility Index Futures; (2) an enhanced statistical distribution for modeling price returns for "synthetic" futures; and (3) a new anti-procyclical floor for variance estimates. OCC's current model for Volatility Index Futures and the proposed changes thereto are described in further detail below.

Background

OCC's margin methodology, the System for Theoretical Analysis and Numerical

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[3] OCC's By-Laws and Rules can be found on OCC's public website: http://optionsclearing.com/about/publications/bylaws.jsp.

Simulations ("STANS"),[4] is OCC's proprietary risk management system that calculates Clearing Member margin requirements. STANS utilizes large-scale Monte Carlo simulations to forecast price and volatility movements in determining a Clearing Member's margin requirement.[5] The STANS margin requirement is calculated at the portfolio level of Clearing Member accounts with positions in marginable securities. The STANS margin requirement consists of an estimate of a 99% expected shortfall[6] over a two-day time horizon and an add-on margin charge for model risk (the concentration/dependence stress test charge).[7] The STANS methodology is used to measure the exposure of portfolios of options, futures and cash instruments, including the Volatility Index Futures cleared by OCC.[8]

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4 See Securities Exchange Act Release No. 53322 (February 15, 2006), 71 FR 9403 (February 23, 2006) (SR-OCC-2004-20).

5 See OCC Rule 601.

6 The expected shortfall component is established as the estimated average of potential losses higher than the 99% value at risk threshold. The term "value at risk" or "VaR" refers to a statistical technique that, generally speaking, is used in risk management to measure the potential risk of loss for a given set of assets over a particular time horizon.

7 A detailed description of the STANS methodology is available at http://optionsclearing.com/risk-management/margins/.

8 Pursuant to OCC Rule 601(e)(1), OCC also calculates initial margin requirements for segregated futures accounts on a gross basis using the Standard Portfolio Analysis of Risk Margin Calculation System ("SPAN"). Commodity Futures Trading Commission ("CFTC") Rule 39.13(g)(8), requires, in relevant part, that derivatives clearing organizations ("DCOs") collect initial margin for customer segregated futures accounts on a gross basis. While OCC uses SPAN to calculate initial margin requirements for segregated futures accounts on a gross basis, OCC believes that margin requirements calculated on a net basis (i.e., permitting offsets between different customers' positions held by a Clearing Member in a segregated futures account using STANS) affords OCC additional protections at the clearinghouse level against risks associated with liquidating a Clearing Member's segregated futures account. As a result, OCC calculates margin requirements for segregated futures accounts using both SPAN on a gross basis and

Volatility Indexes are indexes designed to measure the volatility that is implied by the prices of options on a particular reference index or asset. For example, the Cboe Volatility Index ("VIX") is an index designed to measure the 30-day expected volatility of the Standard & Poor's 500 index ("SPX").[9] OCC currently clears futures contracts on such Volatility Indexes. These Volatility Index Futures contracts can consequently be viewed as an indication of the market's future expectations of the volatility of a given Volatility Index's underlying reference index (e.g., in the case of the VIX, providing a snapshot of the expected market volatility of the underlying over the term of the options making up the index).

Current Model for Volatility Index Futures

Under OCC's existing margin methodology, OCC models the potential final settlement prices of Volatility Index Futures using the underlying index as the risk factor.[10] Final

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STANS on a net basis, and if at any time OCC staff observes a segregated futures account where initial margin calculated pursuant to STANS on a net basis exceeds the initial margin calculated pursuant to SPAN on a gross basis, OCC collateralizes this risk exposure by applying an additional margin charge in the amount of such difference to the account. See Securities Exchange Act Release No. 72331 (June 5, 2014), 79 FR 33607 (June 11, 2014) (SR-OCC-2014-13).

9 Generally speaking, the implied volatility of an option is a measure of the expected future volatility of the value of the option's annualized standard deviation of the price of the underlying security, index, or future at exercise, which is reflected in the current option premium in the market. Using the Black-Scholes options pricing model, the implied volatility is the standard deviation of the underlying asset price necessary to arrive at the market price of an option of a given strike, time to maturity, underlying asset price and given the current risk-free rate. In effect, the implied volatility is responsible for that portion of the premium that cannot be explained by the then-current intrinsic value (i.e., the difference between the price of the underlying and the exercise price of the option) of the option, discounted to reflect its time value.

10 A "risk factor" within OCC's margin system may be defined as a product or attribute whose historical data is used to estimate and simulate the risk for an associated product.

settlement prices are simulated under the assumption that the logarithm of the values of the risk factor (i.e., the underlying spot Volatility Index) follows a mean-reverting[11] random walk[12] with normally-distributed steps.[13] The model is designed to calibrate the distribution that defines this mean-reversion behavior so that the expected final settlement prices of the futures match their currently-observed market prices to ensure that margin coverage is sufficient to limit credit exposures to OCC's participants under normal market conditions. OCC recalculates the Monte Carlo scenarios of the returns of each futures series over its remaining life so that the standard deviation of the scenarios matches two days' worth of the implied volatility of near-the-money and contemporaneously expiring options on the Volatility Index, where available, in order to align with OCC's two-day liquidation period assumption. Currently, the calibration for the distribution is performed on a daily basis.

OCC's current model for Volatility Index Futures, which utilizes the underlying Volatility Index as the sole risk factor, is subject to certain limitations, which would be addressed by the proposed changes described herein. Volatility Indexes, unlike futures contracts, are not investible (i.e., they cannot be replicated by static portfolios of traded contracts). In addition, the futures market has a term structure that cannot be modeled using just the underlying index.

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11 In finance, the term "mean reversion" describes a financial time series in which returns can be very unstable in the short run but very stable in the long run.

12 A random walk is a continuous process with random increments drawn independently from a particular distribution.

13 This is known as a Gaussian Ornstein-Uhlenbeck process. See Uhlenbeck, G. E. and L.S. Ornstein, "On the Theory of Brownian Motion," Physical Review, 36, 823-841 (1930) (explaining the Gaussian Ornstein-Uhlenbeck process).

Finally, futures on a Volatility Index are less volatile and less fat-tailed[14] than the index itself, and these features are term-dependent. The current model was developed before sufficient data on the futures was available, so a model based on "synthetic" futures,[15] as proposed herein, was not an option at the time. Also, the current model does not account for certain strategies Clearing Members might employ involving spreads between delivery dates, which may result in under-margining of those positions.

In recent years, OCC has seen significant growth in trading volume for Volatility Index Futures. As a result, OCC is proposing a number of enhancements to its margin methodology designed to provide for more accurate and responsive margin requirements for Volatility Index Futures.

Proposed Changes

The purpose of the proposed rule change is to introduce enhancements to OCC's margin methodology so that OCC's margin models reflect more current market information for Volatility Index Futures, introduce asymmetry into the statistical distribution used to model price returns of the "synthetic" futures, and reduce procyclicality[16] in the model.

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14 A data set with a "fat tail" is one in which extreme price returns have a higher probability of occurrence than would be the case in a normal distribution.

15 As discussed in further detail below, a "synthetic" futures time series, for the intended purposes of OCC, relates to a uniform substitute for a time series of daily settlement prices for actual futures contracts, which persists over many expiration cycles and thus can be used as a basis for econometric analysis.

16 A quality that is positively correlated with the overall state of the market is deemed to be "procyclical." For example, procyclicality may be evidenced by increasing margin or Clearing Fund requirements in times of stressed market conditions and low margin or Clearing Fund requirements when markets are calm. Hence, anti-procyclical features in a

The proposed changes would specifically include: (1) the daily re-estimation of prices and correlations using "synthetic" futures; (2) an enhanced statistical distribution for modeling price returns for "synthetic" futures; and (3) a new anti-procyclical floor for variance estimates.[17] The main feature of the proposed model, relative to the current model, is the replacement of the underlying Volatility Index itself as a risk factor by risk factors that are based on observed futures prices (i.e., the "synthetic" futures contracts). The proposed change would introduce a new set of risk factors and method for generating scenarios for those risk factors, and hence Volatility Index Futures settlement prices, to be incorporated into the STANS margin calculations. OCC believes its proposed methodology would provide for more accurate and responsive margin requirements and that the imposition of a floor for variance estimates would mitigate procyclicality in OCC's margin methodology for Volatility Index Futures. The proposed changes are described in further detail below.

1. Daily Re-Estimations Using Synthetic Futures

As noted above, OCC currently models the potential final settlement prices of Volatility Index Futures based on the underlying index itself. OCC proposes to modify its modeling approach for Volatility Index Futures by modeling the price distributions of "synthetic" futures on a daily basis based on the historical returns of futures contracts with approximately the same tenor (as opposed to OCC's current approach of calibrating the distribution based on the

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model are measures intended to prevent risk-based models from fluctuating too drastically in response to changing market conditions.

[17] OCC would also make a number of conforming changes throughout it Margins Methodology so that the document arcuately reflects the adoption of the new model.

Volatility Index itself). A "synthetic" futures time series for the intended purposes of OCC relates to a uniform substitute for a time series of daily settlement prices for actual futures contracts, which persists over many expiration cycles and thus can be used as a basis for econometric analysis. One feature of futures contracts is that each contract may have a different expiration date, and at any one point in time there may be a variety of futures contracts on the same underlying interest, all with varying dates of expiry, so that there is no one continuous time series for those futures. "Synthetic" futures can be used to generate a continuous time series of futures contract prices across multiple expirations. These "synthetic" futures price return histories would be inputted into the existing Copula simulation process in STANS alongside the underlying interests of OCC's other cleared and cross-margin products and collateral. The purpose of this use of "synthetic" futures is to allow the margin system to better approximate correlations between futures contracts of different tenors by creating more price data points and their margin offsets.

Under the proposal, the historical "synthetic" time series for these Volatility Indexes would be updated daily and mapped to their corresponding futures contracts. By construction, the first "synthetic" time series would always contain returns of the front contract (i.e., the contract closest to maturity, on any given day), the second, which would correspond to the next month out, and the remaining series would follow the same pattern. Following the expiration date of the front contract, each contract within a time series would be replaced with a contract maturing one month later. While "synthetic" time series contain returns from different contracts, a return on any given date is constructed from prices of the same contract (e.g., as the front

month futures contract "rolls" from the current month to the subsequent month, returns on the roll date would be constructed by using the same contract and not by calculating returns across months). The marginal probability distribution parameters for the "synthetic" time series (i.e., marginal probabilities of various values of the variables in the distribution without reference to the values of the other variables) would be estimated daily using recent historical observations.[18] In cases in which the GARCH variance[19] forecast falls below the sample variance, in addition to being floored by the sample variance, the "synthetic" time series would additionally be "scaled up" through the introduction of a new floor on variance estimates based on the corresponding underlying index in order to reduce procyclicality in the model (as discussed in further detail below).

OCC believes that using synthetic futures in its daily re-estimation process would allow OCC's econometric model for Volatility Index Futures to reflect more current market information and achieve better coverage across the term curve.[20] As a result, OCC believes the

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18 However, for any tenor extension or new contract that does not have enough historical data for the associated "synthetic" security, the scenarios for the longest tenor "synthetic" with enough history would be used as a proxy for generating futures theoretical price scenarios. In this case, the long run floor (discussed below) would be borrowed from the proxy "synthetic."

19 See generally Tim Bollerslev, "Generalized Autoregressive Conditional Heteroskedasticity," Journal of Econometrics, 31(3), 307-327 (1986). The acronym "GARCH" refers to an econometric model that can be used to estimate volatility based on historical data. The general distinction between the "GARCH variance" and the "sample variance" for a given time series is that the GARCH variance uses the underlying time series data to forecast volatility.

20 In 2018, the Commission approved, and issued a Notice of No-Objection to, proposed changes to OCC's margin methodology designed to enable OCC to: (1) obtain daily price data for equity products for use in the daily estimation of econometric model parameters;

proposed changes would result more accurate margin requirements for Clearing Members under the current market conditions.

2. Enhancements to Statistical Distribution for Volatility Index Futures

In addition to using a "synthetic" futures price return history in the process for daily re-estimation of model parameters, OCC is proposing additional enhancements to its margin methodology for Volatility Index Futures to introduce asymmetry into the statistical distribution used to model price returns of the "synthetic" futures. The econometric model currently used in STANS for all price risk factors is an asymmetric GARCH(1,1) with symmetric Standardized Normal Reciprocal Inverse Gaussian (or "NRIG")-distributed logarithmic returns.[21] OCC proposes to move to an asymmetric NRIG distribution for purposes of modeling proportionate returns of the "synthetic" futures. OCC believes the asymmetric NRIG distribution has a better "goodness of fit" [22] to the historical data and allows for more appropriate modeling of observed asymmetry of the distribution. As a result, OCC believes that the proposed change would lead to more consistent treatment of returns both on the upside as well as downside of the distribution.

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(2) enhance OCC's econometric model for updating statistical parameters for all risk factors that reflect the most recent data obtained; (3) improve the sensitivity and stability of correlation estimates across risk factors by using de-volatized returns; and (4) improve OCC's methodology related to the treatment of defaulting securities. See Securities Exchange Act Release No. 83326 (May 24, 2018), 83 FR 25081 (May 31, 2018) (SR-OCC-2017-022) and Securities Exchange Act Release No. 83305 (May 23, 2018), 83 FR 24536 (May 29, 2018) (SR-OCC-2017-811). Under the proposal, correlation updates for "synthetic" futures would be done daily with a one-day lag.

21 See id.

22 The goodness of fit of a statistical model describes the extent to which observed data match the values generated by the model.

Accordingly, OCC believes that the proposed changes would result in margin requirements for Volatility Index Futures that respond more appropriately to changes in market volatility and therefore are more accurate.

3. Introduction of Anti-Procyclical Floor for Variance Estimates

OCC also proposes to introduce a new floor for variance estimates of the Volatility Index Futures that would be modeled under the newly proposed approach to mitigate procyclicality in OCC's margin model. In order to incorporate a variance level implied by a longer time series of data, OCC would calculate a floor for variance estimates based on the underlying index (e.g., VIX) which is expected to have a longer history that is more reflective of the long-run variance level that cannot be otherwise captured using the "synthetic" futures data. The floor would therefore reduce the impact of a sudden increase in margin requirements from a low level and therefore mitigate procyclicality in the model.

Clearing Member Outreach

In order to inform Clearing Members of the proposed change, OCC has provided updates to members at OCC Roundtable[23] and Financial Risk Advisory Council (or "FRAC")[24] meetings and will provide additional reminders about the proposed changes at its next FRAC meeting. In addition, OCC will publish an Information Memo to all Clearing Members describing the

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23 The OCC Roundtable was established to bring Clearing Members, exchanges and OCC together to discuss industry and operational issues. It is comprised of representatives of senior OCC staff, participant exchanges and Clearing Members, representing the diversity of OCC's membership in industry segments, OCC-cleared volume, business type, operational structure and geography.

24 The Financial Risk Advisory Council is a working group comprised of exchanges, Clearing Members and indirect participants of OCC.

proposed changes and will provide additional periodic Information Memo updates prior to the implementation date. Additionally, OCC will perform targeted and direct outreach with Clearing Members that would be most impacted by the proposed change, and OCC would work closely with such Clearing Members to coordinate the implementation and to discuss the impact and timing of any required collateral deposits that may result from the proposed change.[25]

Implementation Timeframe

OCC plans to implement the proposed changes on May 20, 2019, provided that all necessary regulatory approvals are received by that date. If all regulatory approvals are not received by May 20, 2019, or if implementation on that date becomes otherwise impractical, OCC will implement the proposed changes within thirty (30) days after the date that OCC receives all necessary regulatory approvals for the proposed changes. OCC will announce any alternative implementation date of the proposed changes by an Information Memo posted to its public website at least one week prior to implementation.

B. Statutory Basis

OCC believes that the proposed rule change is consistent with Section 17A of the Act[26] and the rules thereunder applicable to OCC. Section 17A(b)(3)(F) of Act[27] requires that the rules of a clearing agency be designed to promote the prompt and accurate clearance and settlement of securities and derivatives transactions and assure the safeguarding of securities and funds which

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25 Specifically, OCC will discuss with those Clearing Members how they plan to satisfy any increase in their margin requirements associated with the proposed change.

26 15 U.S.C. 78q-1.

27 15 U.S.C. 78q-1(b)(3)(F).

are in the custody or control of the clearing agency or for which it is responsible. The purpose of the proposed rule change is to introduce enhancements to OCC's margin methodology so that OCC's margin models reflect more current market information for Volatility Index Futures; use a statistical distribution for modeling proportionate returns of the "synthetic" futures, which OCC believes has a better "goodness of fit" to the historical data and allows for more appropriate modeling of observed asymmetry of the distribution; and reduce procyclicality in the model. The main feature of the proposed model, relative to the current model, is the replacement of the underlying Volatility Index itself as a risk factor by risk factors that are based on observed futures prices (i.e., the "synthetic" futures contracts). OCC believes that using "synthetic" futures in its daily re-estimation process would allow OCC's econometric model for Volatility Index Futures to reflect more current market information and achieve better coverage across the term curve. As a result, OCC believes the proposed changes would result more accurate margin requirements for Clearing Members under the current market conditions that respond more appropriately to changes in market volatility. In addition, OCC believes that the proposed change to an asymmetrical NRIG statistical distribution would lead to more consistent treatment of returns both on the upside as well as downside of the distribution and therefore result in margin requirements for Volatility Index Futures that respond more appropriately to changes in market volatility and therefore are more accurate. Finally, the proposed rule change would also enhance OCC's approach for modeling Volatility Index Futures by introducing a floor on variance estimates in the model to mitigate procyclicality.

The proposed model would be used by OCC to calculate margin requirements designed to limit its credit exposures to participants, and OCC uses the margin it collects from a defaulting Clearing Member to protect other Clearing Members from losses as a result of the default and ensure that OCC is able to continue the prompt and accurate clearance and settlement of its cleared products. As a result, OCC believes the proposed rule changed is designed to promote the prompt and accurate clearance and settlement of securities and derivatives transactions and assure the safeguarding of securities and funds in its custody or control in accordance with Section 17A(b)(3)(F) of the Act.[28]

Rule 17Ad-22(b)(1)[29] requires that a registered clearing agency that performs central counterparty services establish, implement, maintain and enforce written policies and procedures reasonably designed to measure its credit exposures to its participants at least once a day and limit its exposures to potential losses from defaults by its participants under normal market conditions so that the operations of the clearing agency would not be disrupted and non-defaulting participants would not be exposed to losses that they cannot anticipate or control. As described above, the proposed rule change would introduce new model enhancements for OCC's cleared Volatility Index Futures. OCC would use the risk-based model enhancements described herein to measure its credit exposures to its participants on a daily basis and determine margin requirements based on such calculations. OCC believes that the proposed enhancements would result in more accurate and responsive margin requirements by ensuring that OCC's margin

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28 Id.

29 17 CFR 240.17Ad-22(b)(1).

models reflect more current market information for Volatility Index Futures and using an asymmetric distribution in its model that has a better "goodness of fit" to the historical data and allows for more appropriate modeling of observed asymmetry of the distribution. The proposed rule change would also introduce a new floor on variance estimates in the model to mitigate procyclicality. OCC believes the proposed rule change is therefore designed to ensure that OCC sets margin requirements that would serve to limit OCC's exposures to potential losses from defaults by its participants under normal market conditions so that the operations of OCC would not be disrupted, and non-defaulting participants would not be exposed to losses that they cannot anticipate or control. Accordingly, OCC believes the proposed rule change is consistent with Rule 17Ad-22(b)(1).[30]

Rule 17Ad-22(b)(2)[31] further requires, in part, that a registered clearing agency that performs central counterparty services establish, implement, maintain and enforce written policies and procedures reasonably designed use margin requirements to limit its credit exposures to participants under normal market conditions and use risk-based models and parameters to set margin requirements. As noted above, OCC would use the proposed model enhancements to calculate margin requirements for Volatility Index Futures in a manner designed to limit its credit exposures to participants under normal market conditions. Moreover, OCC believes that the proposed risk-based model enhancements for Volatility Index Futures would result in more accurate and responsive margin requirements for OCC's Clearing Members

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30 Id.

31 17 CFR 240.17Ad-22(b)(2).

and would introduce an asymmetric distribution into its model that has a better "goodness of fit" to the historical data and allows for more appropriate modeling of observed asymmetry of the distribution. The proposed floor on variance estimates would also help to reduce procyclicality in margin requirements for Volatility Index Futures. The risk-based model would therefore be used to calculate margin requirements designed to limit OCC's credit exposures to participants under normal market conditions in a manner consistent with Rule 17Ad-22(b)(2).[32]

Rules 17Ad-22(e)(6)(i), (iii), and (v)[33] further require that a covered clearing agency establish, implement, maintain and enforce written policies and procedures reasonably designed to cover its credit exposures to its participants by establishing a risk-based margin system that, among other things: (1) considers, and produces margin levels commensurate with, the risks and particular attributes of each relevant product, portfolio, and market; (2) calculates margin sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default; and (3) uses an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products.

As described in detail above, OCC believes that the proposed model enhancements would result in more accurate, more responsive, and less procyclical margin requirements for OCC's Clearing Members clearing Volatility Index Futures, with such margin serving to protect other Clearing Members from losses arising as a result of a Clearing Member default. The proposed

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32 Id.

33 17 CFR 240.17Ad-22(e)(6)(i), (iii), and (v).

changes are intended to ensure that OCC's margin models reflect more current market information for Volatility Index Futures and would introduce an asymmetric distribution into its model that has a better "goodness of fit" to the historical data and allows for more appropriate modeling of the observed asymmetry of the distribution. Additionally, OCC would introduce a floor on variance estimates in the model to limit procyclicality. OCC therefore believes the proposed changes are reasonably designed to consider and produce margin levels commensurate with the risks and particular attributes of OCC's cleared Volatility Index Futures, calculate margin sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default, and apply an appropriate method for measuring credit exposure that accounts for risk factors and portfolio effects of Volatility Index Futures in a manner consistent with Rules 17Ad-22(e)(6)(i), (iii), and (v).[34]

The proposed rule changes are not inconsistent with the existing rules of OCC, including any other rules proposed to be amended.

Item 4. Self-Regulatory Organization's Statement on Burden on Competition

Section 17A(b)(3)(I) of the Act requires that the rules of a clearing agency do not impose any burden on competition not necessary or appropriate in furtherance of the purposes of Act.[35] OCC does not believe that the proposed rule change would impact or impose any burden on competition. The proposed risk model enhancements would apply to all Clearing Members

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34 Id.

35 15 U.S.C. 78q-1(b)(3)(I).

clearing Volatility Index Futures at OCC. The overall impact of the proposed changes will be mixed and depend on the composition of the portfolio in question. For instance, if a Clearing Member's portfolio is comprised of hedged spread positions in Volatility Index Futures along the term structure, then margins could be much lower when compared to a portfolio that is heavily short the front month futures contract. While at a product level, margins are identical for futures contracts, it is the increased term structure correlations that aid in providing increased offsets depending on the portfolio. OCC does not believe that the proposed rule change would unfairly inhibit access to OCC's services or disadvantage or favor any particular user in relationship to another user. In addition, the proposed rule change would be applied uniformly to all Clearing Members in establishing their margin requirements.

For the foregoing reasons, OCC believes that the proposed rule change is in the public interest, would be consistent with the requirements of the Act applicable to clearing agencies, and would not impact or impose a burden on competition.

Item 5. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants or Others

Written comments were not and are not intended to be solicited with respect to the proposed rule change and none have been received.

Item 6. Extension of Time Period for Commission Action

Not applicable.

Item 7. Basis for Summary Effectiveness Pursuant to Section 19(b)(3) or for Accelerated Effectiveness Pursuant to Section 19(b)(2) or Section 19(b)(7)(D)

Not applicable.

Item 8. Proposed Rule Change Based on Rule of Another Self-Regulatory

Organization or of the Commission

Not applicable.

Item 9. Security-Based Swap Submissions Filed Pursuant to Section 3C of the Act

Not applicable.

Item 10. Advance Notices Filed Pursuant to Section 806(e) of the Payment, Clearing and Settlement Supervision Act

Not applicable.

Item 11. Exhibits

Exhibit 1A. Completed Notice of Proposed Rule Change for publication in the Federal Register.

Exhibit 3. Backtesting and Impact Analysis.

Exhibit 5. Margins Methodology.

Exhibits 3 and 5 have been omitted and filed separately with the Commission. Confidential treatment of Exhibits 3 and 5 is requested pursuant to SEC Rule 24b-2 (17 CFR 240.24b-2).

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, The Options Clearing Corporation has caused this filing to be signed on its behalf by the undersigned hereunto duly authorized.

THE OPTIONS CLEARING CORPORATION

By:_____
Justin W. Byrne
Vice President, Regulatory Filings

EXHIBIT 1A

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-[_____]; File No. SR-OCC-2019-002)

March __, 2019

Self-Regulatory Organizations; The Options Clearing Corporation; Notice of Filing of Proposed Rule Change Related to The Options Clearing Corporation's Margin Methodology for Volatility Index Futures

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Exchange Act" or "Act"),[1] and Rule 19b-4 thereunder,[2] notice is hereby given that on March 18, 2019, The Options Clearing Corporation ("OCC") filed with the Securities and Exchange Commission ("SEC" or "Commission") the proposed rule change as described in Items I, II, and III below, which Items have been prepared primarily by OCC. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Clearing Agency's Statement of the Terms of Substance of the Proposed Rule Change

The proposed rule change is filed in connection with proposed changes to modify OCC's margin methodology for futures on indexes designed to measure volatilities implied by prices of options on a particular underlying interest (such indexes being "Volatility Indexes," and futures contracts on such Volatility Indexes being "Volatility Index Futures"). The proposed methodology enhancements for Volatility Index Futures would include: (1) introducing "synthetic" futures (discussed below) into the daily re-estimation of prices and correlations for Volatility Index Futures; (2) an enhanced

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

2 17 CFR 240.19b-4.

statistical distribution for modeling price returns of the "synthetic" futures; and (3) a new anti-procyclical floor for variance estimates. The proposed changes are discussed in detail in Item 3 below.

The proposed changes to OCC's Margins Methodology document are contained in confidential Exhibit 5 of the filing. Material proposed to be added is marked by underlining and material proposed to be deleted is marked by strikethrough text. OCC also has included backtesting and impact analysis of the proposed model changes in confidential Exhibit 3.

The proposed rule change is available on OCC's website at https://www.theocc.com/about/publications/bylaws.jsp. All terms with initial capitalization that are not otherwise defined herein have the same meaning as set forth in the OCC By-Laws and Rules.[3]

II. Clearing Agency's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, OCC 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. OCC has prepared summaries, set forth in sections (A), (B), and (C) below, of the most significant aspects of these statements.

(A) Clearing Agency's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

(1) Purpose

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[3] OCC's By-Laws and Rules can be found on OCC's public website: http://optionsclearing.com/about/publications/bylaws.jsp.

The purpose of the proposed rule change is to introduce enhancements to OCC's margin methodology for Volatility Index Futures so that OCC's margin model reflects more current market information for Volatility Index Futures and allows for more appropriate modeling of the risk attributes of such products. Specifically, the proposed methodology enhancements for Volatility Index Futures would include: (1) introducing "synthetic" futures into the process for daily re-estimation of prices and correlations for Volatility Index Futures; (2) an enhanced statistical distribution for modeling price returns for "synthetic" futures; and (3) a new anti-procyclical floor for variance estimates. OCC's current model for Volatility Index Futures and the proposed changes thereto are described in further detail below.

Background

OCC's margin methodology, the System for Theoretical Analysis and Numerical Simulations ("STANS"),[4] is OCC's proprietary risk management system that calculates Clearing Member margin requirements. STANS utilizes large-scale Monte Carlo simulations to forecast price and volatility movements in determining a Clearing Member's margin requirement.[5] The STANS margin requirement is calculated at the portfolio level of Clearing Member accounts with positions in marginable securities. The STANS margin requirement consists of an estimate of a 99% expected shortfall[6] over a

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4 See Securities Exchange Act Release No. 53322 (February 15, 2006), 71 FR 9403 (February 23, 2006) (SR-OCC-2004-20).

5 See OCC Rule 601.

6 The expected shortfall component is established as the estimated average of potential losses higher than the 99% value at risk threshold. The term "value at risk" or "VaR" refers to a statistical technique that, generally speaking, is used in risk management to measure the potential risk of loss for a given set of assets over a particular time horizon.

two-day time horizon and an add-on margin charge for model risk (the concentration/dependence stress test charge).[7] The STANS methodology is used to measure the exposure of portfolios of options, futures and cash instruments, including the Volatility Index Futures cleared by OCC.[8]

Volatility Indexes are indexes designed to measure the volatility that is implied by the prices of options on a particular reference index or asset. For example, the Cboe Volatility Index ("VIX") is an index designed to measure the 30-day expected volatility of the Standard & Poor's 500 index ("SPX").[9] OCC currently clears futures contracts on

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7 A detailed description of the STANS methodology is available at http://optionsclearing.com/risk-management/margins/.

8 Pursuant to OCC Rule 601(e)(1), OCC also calculates initial margin requirements for segregated futures accounts on a gross basis using the Standard Portfolio Analysis of Risk Margin Calculation System ("SPAN"). Commodity Futures Trading Commission ("CFTC") Rule 39.13(g)(8), requires, in relevant part, that derivatives clearing organizations ("DCOs") collect initial margin for customer segregated futures accounts on a gross basis. While OCC uses SPAN to calculate initial margin requirements for segregated futures accounts on a gross basis, OCC believes that margin requirements calculated on a net basis (i.e., permitting offsets between different customers' positions held by a Clearing Member in a segregated futures account using STANS) affords OCC additional protections at the clearinghouse level against risks associated with liquidating a Clearing Member's segregated futures account. As a result, OCC calculates margin requirements for segregated futures accounts using both SPAN on a gross basis and STANS on a net basis, and if at any time OCC staff observes a segregated futures account where initial margin calculated pursuant to STANS on a net basis exceeds the initial margin calculated pursuant to SPAN on a gross basis, OCC collateralizes this risk exposure by applying an additional margin charge in the amount of such difference to the account. See Securities Exchange Act Release No. 72331 (June 5, 2014), 79 FR 33607 (June 11, 2014) (SR-OCC-2014-13).

9 Generally speaking, the implied volatility of an option is a measure of the expected future volatility of the value of the option's annualized standard deviation of the price of the underlying security, index, or future at exercise, which is reflected in the current option premium in the market. Using the Black-Scholes options pricing model, the implied volatility is the standard deviation of the underlying asset price necessary to arrive at the market price of an option of a given strike, time to maturity, underlying asset price and given the current risk-

such Volatility Indexes. These Volatility Index Futures contracts can consequently be viewed as an indication of the market's future expectations of the volatility of a given Volatility Index's underlying reference index (e.g., in the case of the VIX, providing a snapshot of the expected market volatility of the underlying over the term of the options making up the index).

Current Model for Volatility Index Futures

Under OCC's existing margin methodology, OCC models the potential final settlement prices of Volatility Index Futures using the underlying index as the risk factor.[10] Final settlement prices are simulated under the assumption that the logarithm of the values of the risk factor (i.e., the underlying spot Volatility Index) follows a mean-reverting[11] random walk[12] with normally-distributed steps.[13] The model is designed to calibrate the distribution that defines this mean-reversion behavior so that the expected final settlement prices of the futures match their currently-observed market prices to ensure that margin coverage is sufficient to limit credit exposures to OCC's participants under normal market conditions. OCC recalculates the Monte Carlo scenarios of the

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free rate. In effect, the implied volatility is responsible for that portion of the premium that cannot be explained by the then-current intrinsic value (i.e., the difference between the price of the underlying and the exercise price of the option) of the option, discounted to reflect its time value.

10 A "risk factor" within OCC's margin system may be defined as a product or attribute whose historical data is used to estimate and simulate the risk for an associated product.

11 In finance, the term "mean reversion" describes a financial time series in which returns can be very unstable in the short run but very stable in the long run.

12 A random walk is a continuous process with random increments drawn independently from a particular distribution.

13 This is known as a Gaussian Ornstein-Uhlenbeck process. See Uhlenbeck, G. E. and L.S. Ornstein, "On the Theory of Brownian Motion," Physical Review, 36, 823-841 (1930) (explaining the Gaussian Ornstein-Uhlenbeck process).

returns of each futures series over its remaining life so that the standard deviation of the scenarios matches two days' worth of the implied volatility of near-the-money and contemporaneously expiring options on the Volatility Index, where available, in order to align with OCC's two-day liquidation period assumption. Currently, the calibration for the distribution is performed on a daily basis.

OCC's current model for Volatility Index Futures, which utilizes the underlying Volatility Index as the sole risk factor, is subject to certain limitations, which would be addressed by the proposed changes described herein. Volatility Indexes, unlike futures contracts, are not investible (i.e., they cannot be replicated by static portfolios of traded contracts). In addition, the futures market has a term structure that cannot be modeled using just the underlying index. Finally, futures on a Volatility Index are less volatile and less fat-tailed[14] than the index itself, and these features are term-dependent. The current model was developed before sufficient data on the futures was available, so a model based on "synthetic" futures,[15] as proposed herein, was not an option at the time. Also, the current model does not account for certain strategies Clearing Members might employ involving spreads between delivery dates, which may result in under-margining of those positions.

In recent years, OCC has seen significant growth in trading volume for Volatility Index Futures. As a result, OCC is proposing a number of enhancements to its margin

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14 A data set with a "fat tail" is one in which extreme price returns have a higher probability of occurrence than would be the case in a normal distribution.

15 As discussed in further detail below, a "synthetic" futures time series, for the intended purposes of OCC, relates to a uniform substitute for a time series of daily settlement prices for actual futures contracts, which persists over many expiration cycles and thus can be used as a basis for econometric analysis.

methodology designed to provide for more accurate and responsive margin requirements for Volatility Index Futures.

Proposed Changes

The purpose of the proposed rule change is to introduce enhancements to OCC's margin methodology so that OCC's margin models reflect more current market information for Volatility Index Futures, introduce asymmetry into the statistical distribution used to model price returns of the "synthetic" futures, and reduce procyclicality[16] in the model.

The proposed changes would specifically include: (1) the daily re-estimation of prices and correlations using "synthetic" futures; (2) an enhanced statistical distribution for modeling price returns for "synthetic" futures; and (3) a new anti-procyclical floor for variance estimates.[17] The main feature of the proposed model, relative to the current model, is the replacement of the underlying Volatility Index itself as a risk factor by risk factors that are based on observed futures prices (i.e., the "synthetic" futures contracts). The proposed change would introduce a new set of risk factors and method for generating scenarios for those risk factors, and hence Volatility Index Futures settlement prices, to be incorporated into the STANS margin calculations. OCC believes its proposed

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16 A quality that is positively correlated with the overall state of the market is deemed to be "procyclical." For example, procyclicality may be evidenced by increasing margin or Clearing Fund requirements in times of stressed market conditions and low margin or Clearing Fund requirements when markets are calm. Hence, anti-procyclical features in a model are measures intended to prevent risk-based models from fluctuating too drastically in response to changing market conditions.

17 OCC would also make a number of conforming changes throughout it Margins Methodology so that the document arcuately reflects the adoption of the new model.

methodology would provide for more accurate and responsive margin requirements and that the imposition of a floor for variance estimates would mitigate procyclicality in OCC's margin methodology for Volatility Index Futures. The proposed changes are described in further detail below.

1. Daily Re-Estimations Using Synthetic Futures

As noted above, OCC currently models the potential final settlement prices of Volatility Index Futures based on the underlying index itself. OCC proposes to modify its modeling approach for Volatility Index Futures by modeling the price distributions of "synthetic" futures on a daily basis based on the historical returns of futures contracts with approximately the same tenor (as opposed to OCC's current approach of calibrating the distribution based on the Volatility Index itself). A "synthetic" futures time series for the intended purposes of OCC relates to a uniform substitute for a time series of daily settlement prices for actual futures contracts, which persists over many expiration cycles and thus can be used as a basis for econometric analysis. One feature of futures contracts is that each contract may have a different expiration date, and at any one point in time there may be a variety of futures contracts on the same underlying interest, all with varying dates of expiry, so that there is no one continuous time series for those futures. "Synthetic" futures can be used to generate a continuous time series of futures contract prices across multiple expirations. These "synthetic" futures price return histories would be inputted into the existing Copula simulation process in STANS alongside the underlying interests of OCC's other cleared and cross-margin products and collateral. The purpose of this use of "synthetic" futures is to allow the margin system to better

approximate correlations between futures contracts of different tenors by creating more price data points and their margin offsets.

Under the proposal, the historical "synthetic" time series for these Volatility Indexes would be updated daily and mapped to their corresponding futures contracts. By construction, the first "synthetic" time series would always contain returns of the front contract (i.e., the contract closest to maturity, on any given day), the second, which would correspond to the next month out, and the remaining series would follow the same pattern. Following the expiration date of the front contract, each contract within a time series would be replaced with a contract maturing one month later. While "synthetic" time series contain returns from different contracts, a return on any given date is constructed from prices of the same contract (e.g., as the front month futures contract "rolls" from the current month to the subsequent month, returns on the roll date would be constructed by using the same contract and not by calculating returns across months). The marginal probability distribution parameters for the "synthetic" time series (i.e., marginal probabilities of various values of the variables in the distribution without reference to the values of the other variables) would be estimated daily using recent historical observations.[18] In cases in which the GARCH variance[19] forecast falls below

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18 However, for any tenor extension or new contract that does not have enough historical data for the associated "synthetic" security, the scenarios for the longest tenor "synthetic" with enough history would be used as a proxy for generating futures theoretical price scenarios. In this case, the long run floor (discussed below) would be borrowed from the proxy "synthetic."

19 See generally Tim Bollerslev, "Generalized Autoregressive Conditional Heteroskedasticity," Journal of Econometrics, 31(3), 307-327 (1986). The acronym "GARCH" refers to an econometric model that can be used to estimate volatility based on historical data. The general distinction between the "GARCH variance" and the "sample variance" for a given time series is that the GARCH variance uses the underlying time series data to forecast volatility.

the sample variance, in addition to being floored by the sample variance, the "synthetic" time series would additionally be "scaled up" through the introduction of a new floor on variance estimates based on the corresponding underlying index in order to reduce procyclicality in the model (as discussed in further detail below).

OCC believes that using synthetic futures in its daily re-estimation process would allow OCC's econometric model for Volatility Index Futures to reflect more current market information and achieve better coverage across the term curve.[20] As a result, OCC believes the proposed changes would result more accurate margin requirements for Clearing Members under the current market conditions.

2. Enhancements to Statistical Distribution for Volatility Index Futures

In addition to using a "synthetic" futures price return history in the process for daily re-estimation of model parameters, OCC is proposing additional enhancements to its margin methodology for Volatility Index Futures to introduce asymmetry into the statistical distribution used to model price returns of the "synthetic" futures. The econometric model currently used in STANS for all price risk factors is an asymmetric GARCH(1,1) with symmetric Standardized Normal Reciprocal Inverse Gaussian (or

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[20] In 2018, the Commission approved, and issued a Notice of No-Objection to, proposed changes to OCC's margin methodology designed to enable OCC to: (1) obtain daily price data for equity products for use in the daily estimation of econometric model parameters; (2) enhance OCC's econometric model for updating statistical parameters for all risk factors that reflect the most recent data obtained; (3) improve the sensitivity and stability of correlation estimates across risk factors by using de-volatized returns; and (4) improve OCC's methodology related to the treatment of defaulting securities. See Securities Exchange Act Release No. 83326 (May 24, 2018), 83 FR 25081 (May 31, 2018) (SR-OCC-2017-022) and Securities Exchange Act Release No. 83305 (May 23, 2018), 83 FR 24536 (May 29, 2018) (SR-OCC-2017-811). Under the proposal, correlation updates for "synthetic" futures would be done daily with a one-day lag.

"NRIG")-distributed logarithmic returns.[21] OCC proposes to move to an asymmetric NRIG distribution for purposes of modeling proportionate returns of the "synthetic" futures. OCC believes the asymmetric NRIG distribution has a better "goodness of fit" 22 to the historical data and allows for more appropriate modeling of observed asymmetry of the distribution. As a result, OCC believes that the proposed change would lead to more consistent treatment of returns both on the upside as well as downside of the distribution. Accordingly, OCC believes that the proposed changes would result in margin requirements for Volatility Index Futures that respond more appropriately to changes in market volatility and therefore are more accurate.

3. Introduction of Anti-Procyclical Floor for Variance Estimates

OCC also proposes to introduce a new floor for variance estimates of the Volatility Index Futures that would be modeled under the newly proposed approach to mitigate procyclicality in OCC's margin model. In order to incorporate a variance level implied by a longer time series of data, OCC would calculate a floor for variance estimates based on the underlying index (e.g., VIX) which is expected to have a longer history that is more reflective of the long-run variance level that cannot be otherwise captured using the "synthetic" futures data. The floor would therefore reduce the impact of a sudden increase in margin requirements from a low level and therefore mitigate procyclicality in the model.

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21 See id.

22 The goodness of fit of a statistical model describes the extent to which observed data match the values generated by the model.

Clearing Member Outreach

In order to inform Clearing Members of the proposed change, OCC has provided updates to members at OCC Roundtable[23] and Financial Risk Advisory Council (or "FRAC")[24] meetings and will provide additional reminders about the proposed changes at its next FRAC meeting. In addition, OCC will publish an Information Memo to all Clearing Members describing the proposed changes and will provide additional periodic Information Memo updates prior to the implementation date. Additionally, OCC will perform targeted and direct outreach with Clearing Members that would be most impacted by the proposed change, and OCC would work closely with such Clearing Members to coordinate the implementation and to discuss the impact and timing of any required collateral deposits that may result from the proposed change.[25]

Implementation Timeframe

OCC plans to implement the proposed changes on May 20, 2019, provided that all necessary regulatory approvals are received by that date. If all regulatory approvals are not received by May 20, 2019, or if implementation on that date becomes otherwise impractical, OCC will implement the proposed changes within thirty (30) days after the date that OCC receives all necessary regulatory approvals for the proposed changes.

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23 The OCC Roundtable was established to bring Clearing Members, exchanges and OCC together to discuss industry and operational issues. It is comprised of representatives of senior OCC staff, participant exchanges and Clearing Members, representing the diversity of OCC's membership in industry segments, OCC-cleared volume, business type, operational structure and geography.

24 The Financial Risk Advisory Council is a working group comprised of exchanges, Clearing Members and indirect participants of OCC.

25 Specifically, OCC will discuss with those Clearing Members how they plan to satisfy any increase in their margin requirements associated with the proposed change.

OCC will announce any alternative implementation date of the proposed changes by an Information Memo posted to its public website at least one week prior to implementation.

(2) Statutory Basis

OCC believes that the proposed rule change is consistent with Section 17A of the Act[26] and the rules thereunder applicable to OCC. Section 17A(b)(3)(F) of Act[27] requires that the rules of a clearing agency be designed to promote the prompt and accurate clearance and settlement of securities and derivatives transactions and assure the safeguarding of securities and funds which are in the custody or control of the clearing agency or for which it is responsible. The purpose of the proposed rule change is to introduce enhancements to OCC's margin methodology so that OCC's margin models reflect more current market information for Volatility Index Futures; use a statistical distribution for modeling proportionate returns of the "synthetic" futures, which OCC believes has a better "goodness of fit" to the historical data and allows for more appropriate modeling of observed asymmetry of the distribution; and reduce procyclicality in the model.

The main feature of the proposed model, relative to the current model, is the replacement of the underlying Volatility Index itself as a risk factor by risk factors that are based on observed futures prices (i.e., the "synthetic" futures contracts). OCC believes that using "synthetic" futures in its daily re-estimation process would allow OCC's econometric model for Volatility Index Futures to reflect more current market information and achieve better coverage across the term curve. As a result, OCC believes

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26 15 U.S.C. 78q-1.

27 15 U.S.C. 78q-1(b)(3)(F).

the proposed changes would result more accurate margin requirements for Clearing Members under the current market conditions that respond more appropriately to changes in market volatility. In addition, OCC believes that the proposed change to an asymmetrical NRIG statistical distribution would lead to more consistent treatment of returns both on the upside as well as downside of the distribution and therefore result in margin requirements for Volatility Index Futures that respond more appropriately to changes in market volatility and therefore are more accurate. Finally, the proposed rule change would also enhance OCC's approach for modeling Volatility Index Futures by introducing a floor on variance estimates in the model to mitigate procyclicality.

The proposed model would be used by OCC to calculate margin requirements designed to limit its credit exposures to participants, and OCC uses the margin it collects from a defaulting Clearing Member to protect other Clearing Members from losses as a result of the default and ensure that OCC is able to continue the prompt and accurate clearance and settlement of its cleared products. As a result, OCC believes the proposed rule changed is designed to promote the prompt and accurate clearance and settlement of securities and derivatives transactions and assure the safeguarding of securities and funds in its custody or control in accordance with Section 17A(b)(3)(F) of the Act.[28]

Rule 17Ad-22(b)(1)[29] requires that a registered clearing agency that performs central counterparty services establish, implement, maintain and enforce written policies and procedures reasonably designed to measure its credit exposures to its participants at least once a day and limit its exposures to potential losses from defaults by its

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28 Id.

29 17 CFR 240.17Ad-22(b)(1).

participants under normal market conditions so that the operations of the clearing agency would not be disrupted and non-defaulting participants would not be exposed to losses that they cannot anticipate or control. As described above, the proposed rule change would introduce new model enhancements for OCC's cleared Volatility Index Futures. OCC would use the risk-based model enhancements described herein to measure its credit exposures to its participants on a daily basis and determine margin requirements based on such calculations. OCC believes that the proposed enhancements would result in more accurate and responsive margin requirements by ensuring that OCC's margin models reflect more current market information for Volatility Index Futures and using an asymmetric distribution in its model that has a better "goodness of fit" to the historical data and allows for more appropriate modeling of observed asymmetry of the distribution. The proposed rule change would also introduce a new floor on variance estimates in the model to mitigate procyclicality. OCC believes the proposed rule change is therefore designed to ensure that OCC sets margin requirements that would serve to limit OCC's exposures to potential losses from defaults by its participants under normal market conditions so that the operations of OCC would not be disrupted, and non-defaulting participants would not be exposed to losses that they cannot anticipate or control. Accordingly, OCC believes the proposed rule change is consistent with Rule 17Ad-22(b)(1).[30]

Rule 17Ad-22(b)(2)[31] further requires, in part, that a registered clearing agency that performs central counterparty services establish, implement, maintain and enforce

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30 Id.

31 17 CFR 240.17Ad-22(b)(2).

written policies and procedures reasonably designed use margin requirements to limit its credit exposures to participants under normal market conditions and use risk-based models and parameters to set margin requirements. As noted above, OCC would use the proposed model enhancements to calculate margin requirements for Volatility Index Futures in a manner designed to limit its credit exposures to participants under normal market conditions. Moreover, OCC believes that the proposed risk-based model enhancements for Volatility Index Futures would result in more accurate and responsive margin requirements for OCC's Clearing Members and would introduce an asymmetric distribution into its model that has a better "goodness of fit" to the historical data and allows for more appropriate modeling of observed asymmetry of the distribution. The proposed floor on variance estimates would also help to reduce procyclicality in margin requirements for Volatility Index Futures. The risk-based model would therefore be used to calculate margin requirements designed to limit OCC's credit exposures to participants under normal market conditions in a manner consistent with Rule 17Ad-22(b)(2).[32]

Rules 17Ad-22(e)(6)(i), (iii), and (v)[33] further require that a covered clearing agency establish, implement, maintain and enforce written policies and procedures reasonably designed to cover its credit exposures to its participants by establishing a risk-based margin system that, among other things: (1) considers, and produces margin levels commensurate with, the risks and particular attributes of each relevant product, portfolio, and market; (2) calculates margin sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of

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32 Id.

33 17 CFR 240.17Ad-22(e)(6)(i), (iii), and (v).

positions following a participant default; and (3) uses an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products.

As described in detail above, OCC believes that the proposed model enhancements would result in more accurate, more responsive, and less procyclical margin requirements for OCC's Clearing Members clearing Volatility Index Futures, with such margin serving to protect other Clearing Members from losses arising as a result of a Clearing Member default. The proposed changes are intended to ensure that OCC's margin models reflect more current market information for Volatility Index Futures and would introduce an asymmetric distribution into its model that has a better "goodness of fit" to the historical data and allows for more appropriate modeling of the observed asymmetry of the distribution. Additionally, OCC would introduce a floor on variance estimates in the model to limit procyclicality. OCC therefore believes the proposed changes are reasonably designed to consider and produce margin levels commensurate with the risks and particular attributes of OCC's cleared Volatility Index Futures, calculate margin sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default, and apply an appropriate method for measuring credit exposure that accounts for risk factors and portfolio effects of Volatility Index Futures in a manner consistent with Rules 17Ad-22(e)(6)(i), (iii), and (v).[34]

The proposed rule changes are not inconsistent with the existing rules of OCC, including any other rules proposed to be amended.

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34 Id.

(B) Clearing Agency's Statement on Burden on Competition

Section 17A(b)(3)(I) requires that the rules of a clearing agency do not impose any burden on competition not necessary or appropriate in furtherance of the purposes of Act.[35] OCC does not believe that the proposed rule change would impact or impose any burden on competition. The proposed risk model enhancements would apply to all Clearing Members clearing Volatility Index Futures at OCC. The overall impact of the proposed changes will be mixed and depend on the composition of the portfolio in question. For instance, if a Clearing Member's portfolio is comprised of hedged spread positions in Volatility Index Futures along the term structure, then margins could be much lower when compared to a portfolio that is heavily short the front month futures contract. While at a product level, margins are identical for futures contracts, it is the increased term structure correlations that aid in providing increased offsets depending on the portfolio. OCC does not believe that the proposed rule change would unfairly inhibit access to OCC's services or disadvantage or favor any particular user in relationship to another user. In addition, the proposed rule change would be applied uniformly to all Clearing Members in establishing their margin requirements.

For the foregoing reasons, OCC believes that the proposed rule change is in the public interest, would be consistent with the requirements of the Act applicable to clearing agencies, and would not impact or impose a burden on competition.

(C) Clearing Agency's Statement on Comments on the Proposed Rule Change Received from Members, Participants or Others

Written comments on the proposed rule change were not and are not intended to be solicited with respect to the proposed rule change and none have been received.

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35 15 U.S.C. 78q-1(b)(3)(I).

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 self- regulatory organization consents, the Commission will:

(A) by order approve or disapprove the 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-OCC-2019-002 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-OCC-2019-002. 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 such filing also will be available for inspection and copying at the principal office of OCC and on OCC's website at https://www.theocc.com/about/publications/bylaws.jsp.

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-OCC-2019-002 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.[36]

Secretary

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[36] 17 CFR 200.30-3(a)(12).