

Required fields are shown with yellow backgrounds and asterisks.

Filing by Options Clearing Corporation
Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

Initial * <input checked="" type="checkbox"/>	Amendment * <input type="checkbox"/>	Withdrawal <input type="checkbox"/>	Section 19(b)(2) * <input type="checkbox"/>	Section 19(b)(3)(A) * <input type="checkbox"/>	Section 19(b)(3)(B) * <input type="checkbox"/>
			Rule		
Pilot <input type="checkbox"/>	Extension of Time Period for Commission Action * <input type="checkbox"/>	Date Expires * <input type="text"/>	<input type="checkbox"/> 19b-4(f)(1)	<input type="checkbox"/> 19b-4(f)(4)	
			<input type="checkbox"/> 19b-4(f)(2)	<input type="checkbox"/> 19b-4(f)(5)	
			<input type="checkbox"/> 19b-4(f)(3)	<input type="checkbox"/> 19b-4(f)(6)	

Notice of proposed change pursuant to the Payment, Clearing, and Settlement Act of 2010	Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934
Section 806(e)(1) * <input checked="" type="checkbox"/>	Section 806(e)(2) * <input type="checkbox"/>
Section 3C(b)(2) * <input type="checkbox"/>	

Exhibit 2 Sent As Paper Document <input type="checkbox"/>	Exhibit 3 Sent As Paper Document <input type="checkbox"/>
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Description

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

Advance Notice related to the introduction of a new Liquidation Cost Model in The Options Clearing Corporation's margin methodology.

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.

(Title *)

Date 04/18/2019	Vice President, Regulatory Filings
By Justin W. Byrne	
(Name *)	

Justin Byrne, jbyrne@theocc.com

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.

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

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

Form 19b-4 Information *

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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 *

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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 *

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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

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Exhibit Sent As Paper Document

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

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Exhibit Sent As Paper Document

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

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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

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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

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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

Advance Notice
by

THE OPTIONS CLEARING CORPORATION

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

Item 1. Text of the Advance Notice

In accordance with Section 806(e)(1) of Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act, entitled Payment, Clearing, and Settlement Supervision Act of 2010 (“Clearing Supervision Act”)¹ and Rule 19b-4(n)(1)(i)² of the Securities Exchange Act of 1934 (“Exchange Act” or “Act”),³ this advance notice is filed by The Options Clearing Corporation (“OCC”) in connection with proposed changes to OCC’s Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description to add a risk-based liquidation charge based on bid-ask spreads to adjust the value of positions to account for the costs of liquidating a defaulting Clearing Member’s portfolio.

The proposed changes to OCC’s Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description are contained in confidential Exhibits 5A - 5C 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 a summary of impact analysis of the proposed model changes in confidential Exhibit 3. The proposed changes are described in detail in Item 10 below. 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.⁴

¹ 12 U.S.C. 5465(e)(1).

² 17 CFR 240.19b-4(n)(1)(i).

³ 15 U.S.C. 78a et seq.

⁴ OCC’s By-Laws and Rules can be found on OCC’s public website:
<http://optionsclearing.com/about/publications/bylaws.jsp>.

Item 2. Procedures of the Self-Regulatory Organization

The advance notice was approved for filing with the Commission by the Board of Directors at a meeting held on February 24, 2017, contingent on further approvals by the Risk Committee of the Board of Directors, which were received at a meeting held on May 2, 2017.

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

Not applicable.

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

Not applicable.

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

Written comments were not and are not intended to be solicited with respect to the advance notice filing and none have been received. OCC will notify the Commission of any written comments received by OCC.

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. Advance Notice 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

Description of the Proposed Change

Background

OCC's margin methodology, the System for Theoretical Analysis and Numerical Simulations ("STANS"), is OCC's proprietary risk management system that calculates Clearing Member margin requirements.⁵ STANS utilizes large-scale Monte Carlo simulations to forecast price and volatility movements in determining a Clearing Member's margin requirement.⁶ The STANS margin requirement is calculated at the portfolio level of Clearing Member legal entity marginable net positions tier account (tiers can be customer, firm, or market maker) and consists of an estimate of a 99% 2-day expected shortfall ("99% Expected Shortfall") and an add-on for model risk (the concentration/dependence stress test charge). The STANS methodology is used to measure the exposure of portfolios of options and futures cleared by OCC and cash instruments in margin collateral.

STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. The base component of the STANS margin requirement for each account is obtained using a risk measure known as 99% Expected Shortfall. Under the 99% Expected Shortfall calculation, an account has a base margin excess (deficit) if its positions in cleared products, plus all existing collateral - whether of types included in the Monte Carlo

⁵ See Securities Exchange Act Release No. 53322 (February 15, 2006), 71 FR 9403 (February 23, 2006) (SR-OCC-2004-20). A detailed description of the STANS methodology is available at <http://optionsclearing.com/risk-management/margins/>.

⁶ See OCC Rule 601.

simulation or of types subjected to traditional “haircuts” — would have a positive (negative) net worth after incurring a loss equal to the average of all losses beyond the 99% value at risk (or “VaR”) point. This base component is then adjusted by the addition of a stress test component, which is obtained from consideration of the increases in 99% Expected Shortfall that would arise from market movements that are especially large and/or in which various kinds of risk factors exhibit perfect or zero correlations in place of their correlations estimated from historical data, or from extreme adverse idiosyncratic movements in individual risk factors to which the account is particularly exposed.⁷ STANS margin requirements are intended to cover potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation costs OCC may incur in closing out a defaulted Clearing Member’s portfolio.⁸ Closing out positions in a defaulted Clearing Member’s portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads.

Proposed Changes

OCC is proposing to enhance its margin methodology by introducing a new model to

⁷ STANS margins may also include other add on charges, which are considerably smaller than the base and stress test components, and many of which affect only a minority of accounts.

⁸ A liquidation cost model was introduced into STANS in 2012 as part of OCC’s OTC clearing initiatives. The model is only applied to long-dated options on the Standard & Poor’s (“S&P”) 500 index (“SPX”) that have a tenor of three-years or greater. See Securities Exchange Act Release No. 34-70719 (October 18, 2013), 78 FR 63548 (October 24, 2013) (SR-OCC-2013-16). The existing liquidation model for long-dated SPX options would be replaced by this new model. OCC currently does not have any open interest in OTC options. OCC does currently clear similar exchange traded long-dated FLEX SPX options; however, these options make up less than 0.5% of SPX options open interest.

estimate the liquidation cost for all options and futures, as well as the securities in margin collateral. As noted above, closing out positions of a defaulted Clearing Member in the open market could entail selling longs at bid price and covering shorts at ask price. These closing-out costs are currently not taken into account in STANS for all options (with the exception of long-dated SPX index option series, as noted above).⁹ Therefore, the purpose of the proposed change is to add additional financial resources in the form of margin, based on liquidation cost grids calibrated using historical stressed periods, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios in the event of a default. The liquidation cost charge would be applied as an add-on to all accounts incurring a STANS margin charge.

The proposed liquidation cost model calculates liquidation cost based on risk measures, gross contract volumes and market bid-ask spreads. In general, the proposed model would be used to calculate two risk-based liquidation costs for a portfolio, Vega¹⁰ liquidation cost (“Vega LC”) and Delta liquidation cost (“Delta LC”), using “Liquidation Grids.”¹¹ Options products will incur both Vega and Delta LCs while Delta-one¹² products such as futures contracts, Treasury securities and equity securities, will have only a Delta charge.

⁹ Id.

¹⁰ The Delta and Vega of an option represent the sensitivity of the option price with respect to the price and volatility of the underlying security, respectively.

¹¹ “Liquidation Grids” would be comprised collectively of Vega Liquidation Grids, Vega Notional Grids, Delta Liquidation Grids, and Delta Notional Grids. Liquidation Grids are discussed in more detail below in the *Creation and Calibration of Liquidation Grids* section.

¹² “Delta one products” refer to products for which a change in the value of the underlying asset results in a change of the same, or nearly the same, proportion in the value of the product.

The proposed liquidation cost model described herein would include: (1) the decomposition of the defaulter's portfolio into sub-portfolios by underlying security; (2) the creation and calibration of Liquidation Grids used to determine liquidation costs; (3) the calculation of the Vega LC (including a minimum Vega LC charge) for options products; (4) the calculation of Delta LCs for both options and Delta-one products; (5) the calculation of Vega and Delta concentration factors; (6) the calculation of volatility correlations for Vega LCs; (7) the establishment of a STANS margin floor based on the liquidation cost; and (8) conforming changes to OCC's Margin Policy and Stress Testing and Clearing Fund Methodology Description.

The new liquidation cost model would cover the following cleared products in a Clearing Member's portfolio: options on indices, equities, Exchange Traded Funds ("ETFs") and futures; FLEX options; future contracts; Treasury securities; and stock loan and collateral securities. The securities not included in STANS margin calculations would not be covered by the new model.

The proposed approach to calculating liquidation costs and the conforming changes to OCC's Margin Policy are described in further detail below.

1. Portfolio Decomposition and Creation of Sub-portfolios

For a portfolio consisting of many contracts and underlyings, the proposed model would first divide (or decompose) the portfolio into sub-portfolios by underlying security such that all contracts with the same underlying are grouped into the same sub-portfolio. The Vega LC and Delta LC are first calculated at a sub-portfolio level and then aggregated to derive the final liquidation cost for the total portfolio. All the option positions with the same fundamental underlying would form one sub-portfolio because they share the same risk characteristics. The equity index, index future and index ETFs would all be categorized by the underlying index that

is the basis for the index, future, and ETF-underlying securities. The corresponding options on the index, index future, and ETFs would therefore fall into the same sub-portfolio. In addition, FLEX options on the same underlying would be included in the same sub-portfolio of the regular options. Similarly, cash products such as equities and futures would be grouped in the same sub-category based on their underlying symbols. All Treasury security positions would form one sub-portfolio. The calculation of Vega LC and Delta LC for each sub-portfolio is summarized in the next sections.

2. Creation and Calibration of Liquidation Grids

A key element of the proposed liquidation cost model is the “Liquidation Grids.” The calculations of Vega LC and Delta LC involve a number of liquidity-related quantities such as volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional. The collection of these quantities would be used to create the following Liquidation Grids.

1. Vega Liquidation Grids (or volatility grids): the Vega Liquidation Grids would represent the level of bid-ask spreads on the implied volatility of option contracts for a given underlying. Since the volatility spreads of option contracts vary by the Delta and tenor of the option, OCC would divide the contracts into several Delta buckets by tenor buckets.¹³ Each pair (Delta, tenor) is referred to as a Vega bucket. For each bucket, an average volatility spread is estimated and defined as the volatility grid for

¹³ Initially, Vega Liquidation Grids would consist of 5 Delta buckets by 5 tenor buckets, with a total of 25 pairs; however, the Vega Liquidation Grids would be reviewed annually or at a frequency determined by OCC’s Model Risk Working Group (“MRWG”) and updated as needed as determined by the MRWG. The MRWG is responsible for assisting OCC’s Management Committee in overseeing and governing OCC’s model-related risk issues and includes representatives from OCC’s Financial Risk Management department, Quantitative Risk Management department, Model Validation Group, and Enterprise Risk Management department.

- the bucket. The size of grid would essentially represent the cost for liquidating one unit of Vega risk in the bucket.
2. Vega Notional Grid: the Vega Notional Grid of an underlying security would be the average trading options volume weighted by the Vega of all options on the given underlying. The size of Vega Notional grids would indicate the average daily trading volume in terms of dollar Vegas (i.e., the Vega multiplied by the volume of the option).
 3. Delta Liquidation Grid: the Delta liquidation grid would represent an estimated bid-ask price spread (in percentage) on the underlying.¹⁴ It represents the cost of liquidating one dollar unit of the underlying security. The Delta liquidation grid for Treasury securities represents bid-ask yield spreads, expressed in basis points.
 4. Delta Notional Grid: the Delta Notional grid of an underlying security would represent the average trading volume in dollars of the security.¹⁵

Vega Notional Grids are calibrated at the security level; that is, each individual underlying security would have its own Vega Notional. The Delta Notional Grid and both Vega and Delta Liquidation Grids for all underlying securities are estimated at the levels of a fixed

¹⁴ Delta Liquidation Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the cost of liquidating one dollar unit of the underlying security. The Delta Liquidation Grids would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed as determined by the MRWG.

¹⁵ Delta Notional Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the average trading volume in dollars of the underlying security. The Delta Notional Grids would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed as determined by the MRWG.

number of classes based on their liquidity level.¹⁶ All equity securities would be divided, based on their membership in commonly used market indices (including, but not limited to, the S&P 100 and 500 index) or other market liquidity measurements, into liquidity classes (which may include, but are not limited to, High Liquid Equities, Medium Liquid Equities and Low Liquid Equities). Any new equity security would generally default to the lowest liquidity classification unless otherwise assigned to a higher liquidity classification when deemed necessary. Major indices (e.g., SPX or the Cboe Volatility Index (“VIX”)) may form their own index liquidity class, which may cover indices, index ETFs, and index futures. In addition, sector ETFs, ETFs on a major commodity (such as Gold, Crude/Natural Gas, Metals, and Electricity), and Treasury ETFs would generally each form individual classes of their own, subject to the availability of liquidation data. Pursuant to the proposed Margins Methodology, these liquidity classes would be reviewed annually or at a frequency determined by OCC’s MRWG and updated as needed, taking into consideration such factors including, but not limited to, changes in membership of the S&P 100 index and S&P 500 index, listing and delisting of securities, and any corporate actions on the existing securities.

Because the bid-ask spreads can change daily, the use of spreads from current market conditions could cause liquidation costs to fluctuate dramatically with market volatility, especially during a stressed market period. To mitigate this procyclicality issue, Liquidation Grids would be calibrated from several historical stressed periods, which are selected based on the history of VIX index levels and would remain unchanged with time until a new stressed

¹⁶ Within the same liquidity group, the Vega Notional can vary dramatically from name to name. Moreover, Vega risk can be much greater than Delta risk. As a result, OCC would calculate Vega Notionals at the security level as opposed to the liquidity level.

period is selected and added to the calibrations in accordance with the requirements of the proposed Margins Methodology.¹⁷

3. Vega Liquidation Cost

Vega Liquidation Cost Calculation

Vega LC is the main component of the proposed liquidation cost model. For a simple option contract, the Vega LC would be its position Vega multiplied by its respective bucket in the Vega Liquidation Grid. The result is approximately equal to one half of the bid-ask price spread. For a portfolio consisting of many contracts and underlyings, the model first divides the portfolio into sub-portfolios by underlying security such that all contracts with the same underlying are grouped into the same sub-portfolio (as described above). The Vega LCs for sub-portfolios are calculated first and then aggregated to derive the Vega LC for the total portfolio.

The Vega LC for a sub-portfolio, which consists of all the contracts with the same underlying security, would be calculated in several steps. First, the Liquidation Grids would be calibrated for Vega “buckets” that consist of Delta bins by tenor bins as discussed above. These Vega buckets are used to represent the volatility risk at the different areas on the implied volatility surface. Next, the Vega of each contract position in a given sub-portfolio would be calculated and bucketed into one of the Vega buckets. The Vegas falling into the same Vega bucket would then be netted. The Vega LC for each of the Vega buckets is calculated as the net Vega multiplied by the Vega grid of the buckets. Finally, the total liquidation cost for the sub-portfolio would be aggregated from these bucket Vega LCs by using correlations between the Vega buckets. Since the sub-portfolios are formed by the fundamental equity or index

¹⁷ The Liquidation Grids will be reviewed annually or at a frequency determined by the MRWG.

underlying the option, the Vega LCs of closely related but different underlying securities are allowed to net. For example, Vega LCs for SPX and related indices, futures, and ETFs that are based on the S&P 500 index would be allowed 100% netting.

The Vega LC for the total portfolio would be a similar correlation-based sum of Vega LCs of all the sub-portfolios, taking into account correlations between the products' implied volatility.¹⁸

Minimum Liquidation Cost

Because the proposed model allows risk netting across closely related option contracts, it is possible that a well-hedged option strategy could result in a very small or zero liquidation cost. To prevent this from happening, a minimum liquidation cost would be introduced to the Vega liquidation charges. The minimum liquidation cost for a sub-portfolio would be calculated as the gross number of option contracts multiplied by a minimum cost per contract value.¹⁹ The minimum cost amount would be calculated for the entire portfolio and would be used to floor the final total Vega LC. The proposal would not apply a minimum cost for Delta LC due to the immaterial impact a minimum Delta LC would have on the overall liquidation cost charge.

4. Delta Liquidation Cost

In addition to Vega risk, the model also considers the Delta risk presented in an entire portfolio. If a portfolio has positions in either options, futures, equities, or Treasury securities, it

¹⁸ See infra, *Volatility Correlations* section.

¹⁹ The minimum cost rate would initially be set as \$2 per contract, unless the position is long and the net asset value per contract is less than \$2. (For a typical option with a contract size of 100, this would occur if the option was priced below 0.02.) This value would be reviewed annually or at a frequency determined by OCC's MRWG and recalibrated as needed over time.

will contain some Delta risk. Under the proposed model, the liquidation cost due to Delta risk in a sub-portfolio (as defined by the underlying) would be approximated by the net dollar Delta of the sub-portfolio multiplied by its respective bucket in the Delta Liquidation Grid.

The proposed model would allow netting of Delta LC if the option contracts, futures, or equity positions belong to or are related to a top index (such as SPX or VIX). For example, in a portfolio, positions in SPX-related options, options on futures, futures, or collateral have their Delta LC netted.

Under the proposed model, U.S. dollar Treasury bonds would form one sub-portfolio. The Delta or DV01 (*i.e.*, dollar value of one basis point) of all the bonds would be calculated and bucketed into six tenor buckets. For each bucket, the liquidation cost would be approximated by the absolute value of the net DV01 of the bucket multiplied by the Liquidation Grid (in basis points) in the corresponding tenor bucket. The total liquidation cost for the Treasury security sub-portfolio would then be a sum of the costs over all the buckets.

The Delta LC for the total portfolio would be simple sum of the Delta LCs over all sub-portfolios.

5. Concentration Charges

In addition to Vega and Delta LCs, the proposed model also would incorporate the potential risks involved in closing out large or concentrated positions in a portfolio. The “largeness” of an option position is typically measured in terms of Average Daily Volume (“ADV”). The Vega volume or notional, defined as “Vega-weighted ADV,” is also a relevant measure of options trading volume. Closing out large or concentrated positions with one or more Vega notional may either take longer to liquidate or demand wider spreads, and therefore could incur additional cost. To cover this additional risk, the proposed model would use Vega

concentration factors (“Vega CF”) to scale the Vega LC for option positions. The Vega CFs would be equal to one for small positions that are less than one Vega notional, but may be scaled up for large positions as a function of the size of the positions. Similar to Vega CF, Delta concentration factors (“Delta CF”) would be used to scale the Delta LC to account for the concentration risk associated with large Delta positions.

6. Volatility Correlations

Under the proposed model, the Vega LC for each underlying sub-portfolio is calculated using correlations between the Vega buckets. The correlation matrix from the most liquid product (SPX) would be used as the base and would be scaled for other underlyings based on their liquidity class. These would be calibrated from time periods that overlap the stress periods used to calculate Liquidation Grids.

To aggregate the liquidation cost at the portfolio level, the pair-wise correlations of implied volatilities between different underlyings are needed. OCC would use a single correlation value for all cross-underlying correlations rather than a correlation matrix for all cross-underlying correlations to simplify the calibration of the grids. To account for potential errors that may arise from using a single correlation value, OCC would calculate three single correlations representing the minimum, average, and maximum correlation across the liquidity class to determine three different Vega LCs. The highest of these three Vega LCs would be used as the final Vega LC.

7. STANS Margin Floor

The proposed liquidation costs would be added to the base and stress margin components of STANS that are intended to cover the potential losses due to price movements over a two-day risk horizon. In certain cases, well-hedged portfolios may not experience any loss and the

resultant STANS margin requirement is close to zero or may even become positive in some extreme cases. If the STANS requirement is positive, this may result in a credit instead of a charge for the Clearing Member. To account for the risk of potentially liquidating a portfolio at current (instead of two-day ahead) prices, no credit from the margin would be allowed so that the final margin requirement would not be lower than the amount of the liquidation cost.

8. Margin Policy and Stress Testing and Clearing Fund Methodology Description

OCC also would make conforming changes to its Margin Policy and Stress Testing and Clearing Fund Methodology Description to reflect the inclusion of the new liquidation cost charge as an add-on charge to the base STANS margin and how the liquidation cost charge add-on would be incorporated in Clearing Fund shortfall calculations.²⁰

Clearing Member Outreach

To inform Clearing Members of the proposed change, OCC has provided overviews of its proposed liquidation cost model to the Financial Risk Advisory Council (“FRAC”), a working group comprised of exchanges, Clearing Members and indirect participants of OCC, and the OCC Roundtable, which was established to bring Clearing Members, exchanges and OCC together to discuss industry and operational issues,²¹ during 2016 and 2017. OCC has also

²⁰ The Stress Testing and Clearing Fund Methodology Description would be revised to note that the shortfall of a portfolio is calculated by offsetting its profit and loss (“PnL”) in a stress scenario with its STANS margin assets, which include base margin (*i.e.*, 99% Expected Shortfall), excess net asset value related to long option premium, any non-collateral-in-margins haircut amounts, and various other Add-On Charges such as the proposed liquidation cost charges. Since the cost of liquidation is not considered in stress scenario PnL, a charge for liquidation costs using the same values as calculated for margins is included in shortfall calculations to ensure that the liquidation cost charge is part of the required total credit financial resources.

²¹ The OCC Roundtable is comprised of representatives of the senior OCC staff, participant exchanges and Clearing Members, representing the diversity of OCC’s membership in

published Information Memos to all Clearing Members discussing the proposed change.

Under the proposed liquidation cost model, each Clearing Member/account would independently observe different levels of impact based on the composition of their cleared portfolios. Based on OCC's analysis to-date, directional portfolios containing more outright positions, which are more typically associated with customer accounts, are most likely to see the largest impact from the proposed liquidation cost charges, while more well-hedged portfolios, such as market maker accounts, would be less impacted (and are more likely to incur the minimum liquidation cost charge). In the aggregate, OCC expects the proposed liquidation cost charges to make up approximately 5-8% of total risk margin charges, with customer accounts accounting for roughly 60% of the proposed liquidation cost charges, and proprietary accounts and market makers generating approximately 25% and 15% of the proposed liquidation cost charges, respectively.

Given the magnitude of expected changes in margins, OCC expects to conduct an extended parallel implementation for Clearing Members prior to implementation. Additionally, OCC will perform additional outreach to the FRAC upon submission of its regulatory filings to remind Clearing Members of the pending changes and direct outreach with those Clearing Members that would be most impacted by the proposed change and would work closely with such Clearing Members to coordinate the implementation and associated funding for such Clearing Members resulting from the proposed change.²²

industry segments, OCC-cleared volume, business type, operational structure and geography.

²² 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 expects to implement the proposed changes no sooner than thirty (30) days and no later than one hundred eighty (180) days from the date that OCC receives all necessary regulatory approvals for the filings. OCC will announce the implementation date of the proposed change by an Information Memo posted to its public website at least two (2) weeks prior to implementation.

Expected Effect on and Management of Risk

OCC believes that the proposed change, which would introduce a new liquidation cost model into OCC's margin methodology, would reduce the overall level of risk to OCC, its Clearing Members, and the markets served by OCC. As described above, STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. These margins are intended to cover the potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation cost OCC may incur in closing out a defaulted Clearing Member's portfolio. Closing out positions in a defaulted portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads. The proposed liquidation cost model would calculate liquidation costs for OCC's cleared products based on risk measures, gross contract volumes and market bid-ask spreads. The proposed model is designed to provide additional financial resources in the form of margin, based on liquidation costs and current market prices, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios. OCC uses the margin it collects from a defaulting Clearing Member to protect other Clearing Members from losses they cannot anticipate or control as a result of such a default. As a result,

OCC believes the proposed changes would reduce the overall level of risk to OCC, its Clearing Members, and the markets served by OCC.

Consistency with the Payment, Clearing and Settlement Supervision Act

The stated purpose of the Clearing Supervision Act is to mitigate systemic risk in the financial system and promote financial stability by, among other things, promoting uniform risk management standards for systemically important financial market utilities and strengthening the liquidity of systemically important financial market utilities.²³ Section 805(a)(2) of the Clearing Supervision Act²⁴ also authorizes the Commission to prescribe risk management standards for the payment, clearing and settlement activities of designated clearing entities, like OCC, for which the Commission is the supervisory agency. Section 805(b) of the Clearing Supervision Act²⁵ states that the objectives and principles for risk management standards prescribed under Section 805(a) shall be to:

- promote robust risk management;
- promote safety and soundness;
- reduce systemic risks; and
- support the stability of the broader financial system.

OCC believes that the proposed changes described herein would enhance its margin methodology in a manner consistent with the objectives and principles of Section 805(b) of the Clearing Supervision Act²⁶ and the risk management standards adopted by the Commission in

²³ 12 U.S.C. 5461(b).

²⁴ 12 U.S.C. 5464(a)(2).

²⁵ 12 U.S.C. 5464(b).

²⁶ Id.

Rule 17Ad-22 under the Act for the reasons set forth below.²⁷

OCC believes the proposed changes are consistent with the objectives and principles of Section 805(b) of the Clearing Supervision Act.²⁸ As described above, STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. These margins are intended to cover the potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation cost OCC could incur in closing out a defaulted Clearing Member's portfolio. Closing out positions in a defaulted portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads. The proposed model is designed to provide additional financial resources in the form of margin to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios. OCC uses the margin it collects from a defaulting Clearing Member to protect other Clearing Members from losses as a result of the default. As a result, OCC believes the proposed change would promote robust risk management and safety and soundness while reducing systemic risks and would thereby support the stability of the broader financial system.

Rule 17Ad-22(b)(2)²⁹ requires, in part, that a registered clearing agency that performs

²⁷ 17 CFR 240.17Ad-22. See Securities Exchange Act Release Nos. 68080 (October 22, 2012), 77 FR 66220 (November 2, 2012) (S7-08-11) ("Clearing Agency Standards"); 78961 (September 28, 2016), 81 FR 70786 (October 13, 2016) (S7-03-14) ("Standards for Covered Clearing Agencies"). OCC is a "covered clearing agency" as defined in Rule 17Ad-22(a)(5) and therefore must comply with the requirements of Rule 17Ad-22(e).

²⁸ 12 U.S.C. 5464(b).

²⁹ 17 CFR 240.17Ad-22(b)(2).

central counterparty services establish, implement, maintain and enforce written policies and procedures reasonably designed to 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 described above, the proposed liquidation cost model is a risk-based model that calculates liquidation cost based on risk measures, gross contract volumes, and market bid-ask spreads. The proposed model is designed to provide additional financial resources in the form of margin, based on liquidation costs and current market prices, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios, which currently are not taken into account in STANS for all of OCC's cleared products. Accordingly, the proposed risk-based model would 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).³⁰

Rule 17Ad-22(e)(6)(i)³¹ further requires a covered clearing agency that provides central counterparty services to 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 considers, and produces margin levels commensurate with, the risks and particular attributes of each relevant product, portfolio, and market. The proposed liquidation cost model is a risk-based model that would calculate additional margin charges designed to account for potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios by taking into consideration the risks and attributes

³⁰ Id.

³¹ 17 CFR 240.17Ad-22(e)(6)(i).

associated with relevant products and portfolios cleared by OCC (e.g., volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional). Accordingly, OCC believes the proposed changes are consistent with Rule 17Ad-22(e)(6)(i).³²

Item 11. Exhibits

Exhibit 1A. Completed Notice of Advance Notice for publication in the Federal Register.

Exhibit 3. Confidential Impact Analysis.

Exhibit 5A. Margins Methodology.

Exhibit 5B. Margin Policy.

Exhibit 5C. Stress Testing and Clearing Fund Methodology Description.

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

³²

Id.

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-2019-802)

April __, 2019

Self-Regulatory Organizations; The Options Clearing Corporation; Notice of Filing of Advance Notice Related to the Introduction of a New Liquidation Cost Model in The Options Clearing Corporation's Margin Methodology

Pursuant to Section 806(e)(1) of Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act, entitled Payment, Clearing and Settlement Supervision Act of 2010 ("Clearing Supervision Act")¹ and Rule 19b-4(n)(1)(i)² of the Securities Exchange Act of 1934 ("Exchange Act" or "Act"),³ notice is hereby given that on April 18, 2019, The Options Clearing Corporation ("OCC") filed with the Securities and Exchange Commission ("Commission") an advance notice as described in Items I, II and III below, which Items have been prepared by OCC. The Commission is publishing this notice to solicit comments on the advance notice from interested persons.

I. Clearing Agency's Statement of the Terms of Substance of the Advance Notice

This advance notice is submitted in connection with proposed changes to OCC's Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description to add a risk-based liquidation charge based on bid-ask spreads to adjust the value of positions to account for the costs of liquidating a defaulting Clearing Member's portfolio. The proposed changes to OCC's Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description are

¹ 12 U.S.C. 5465(e)(1).

² 17 CFR 240.19b-4(n)(1)(i).

³ 15 U.S.C. 78a et seq.

contained in confidential Exhibits 5A - 5C 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 a summary of impact analysis of the proposed model changes in confidential Exhibit 3. The proposed changes are described in detail in Item II below.

The advance notice 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.⁴

II. Clearing Agency's Statement of the Purpose of, and Statutory Basis for, the Advance Notice

In its filing with the Commission, OCC included statements concerning the purpose of and basis for the advance notice and discussed any comments it received on the advance notice. 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 and B below, of the most significant aspects of these statements.

(A) Clearing Agency's Statement on Comments on the Advance Notice 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. OCC will notify the Commission of any written comments received by OCC.

⁴ OCC's By-Laws and Rules can be found on OCC's public website: <http://optionsclearing.com/about/publications/bylaws.jsp>.

- (B) Advance Notices Filed Pursuant to Section 806(e) of the Payment, Clearing, and Settlement Supervision Act

Description of the Proposed Change

Background

OCC's margin methodology, the System for Theoretical Analysis and Numerical Simulations ("STANS"), is OCC's proprietary risk management system that calculates Clearing Member margin requirements.⁵ STANS utilizes large-scale Monte Carlo simulations to forecast price and volatility movements in determining a Clearing Member's margin requirement.⁶ The STANS margin requirement is calculated at the portfolio level of Clearing Member legal entity marginable net positions tier account (tiers can be customer, firm, or market maker) and consists of an estimate of a 99% 2-day expected shortfall ("99% Expected Shortfall") and an add-on for model risk (the concentration/dependence stress test charge). The STANS methodology is used to measure the exposure of portfolios of options and futures cleared by OCC and cash instruments in margin collateral.

STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. The base component of the STANS margin requirement for each account is obtained using a risk measure known as 99% Expected Shortfall. Under the 99% Expected Shortfall calculation, an account has a base margin excess (deficit) if its positions in cleared products, plus all existing collateral - whether of

⁵ See Securities Exchange Act Release No. 53322 (February 15, 2006), 71 FR 9403 (February 23, 2006) (SR-OCC-2004-20). A detailed description of the STANS methodology is available at <http://optionsclearing.com/risk-management/margins/>.

⁶ See OCC Rule 601.

types included in the Monte Carlo simulation or of types subjected to traditional “haircuts” — would have a positive (negative) net worth after incurring a loss equal to the average of all losses beyond the 99% value at risk (or “VaR”) point. This base component is then adjusted by the addition of a stress test component, which is obtained from consideration of the increases in 99% Expected Shortfall that would arise from market movements that are especially large and/or in which various kinds of risk factors exhibit perfect or zero correlations in place of their correlations estimated from historical data, or from extreme adverse idiosyncratic movements in individual risk factors to which the account is particularly exposed.⁷ STANS margin requirements are intended to cover potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation costs OCC may incur in closing out a defaulted Clearing Member’s portfolio.⁸ Closing out positions in a defaulted Clearing Member’s portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads.

Proposed Changes

⁷ STANS margins may also include other add on charges, which are considerably smaller than the base and stress test components, and many of which affect only a minority of accounts.

⁸ A liquidation cost model was introduced into STANS in 2012 as part of OCC’s OTC clearing initiatives. The model is only applied to long-dated options on the Standard & Poor’s (“S&P”) 500 index (“SPX”) that have a tenor of three-years or greater. See Securities Exchange Act Release No. 34-70719 (October 18, 2013), 78 FR 63548 (October 24, 2013) (SR-OCC-2013-16). The existing liquidation model for long-dated SPX options would be replaced by this new model. OCC currently does not have any open interest in OTC options. OCC does currently clear similar exchange traded long-dated FLEX SPX options; however, these options make up less than 0.5% of SPX options open interest.

OCC is proposing to enhance its margin methodology by introducing a new model to estimate the liquidation cost for all options and futures, as well as the securities in margin collateral. As noted above, closing out positions of a defaulted Clearing Member in the open market could entail selling longs at bid price and covering shorts at ask price. These closing-out costs are currently not taken into account in STANS for all options (with the exception of long-dated SPX index option series, as noted above).⁹ Therefore, the purpose of the proposed change is to add additional financial resources in the form of margin, based on liquidation cost grids calibrated using historical stressed periods, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios in the event of a default. The liquidation cost charge would be applied as an add-on to all accounts incurring a STANS margin charge.

The proposed liquidation cost model calculates liquidation cost based on risk measures, gross contract volumes and market bid-ask spreads. In general, the proposed model would be used to calculate two risk-based liquidation costs for a portfolio, Vega¹⁰ liquidation cost (“Vega LC”) and Delta liquidation cost (“Delta LC”), using “Liquidation Grids.”¹¹ Options products will incur both Vega and Delta LCs while Delta-one¹²

⁹ Id.

¹⁰ The Delta and Vega of an option represent the sensitivity of the option price with respect to the price and volatility of the underlying security, respectively.

¹¹ “Liquidation Grids” would be comprised collectively of Vega Liquidation Grids, Vega Notional Grids, Delta Liquidation Grids, and Delta Notional Grids. Liquidation Grids are discussed in more detail below in the *Creation and Calibration of Liquidation Grids* section.

products such as futures contracts, Treasury securities and equity securities, will have only a Delta charge.

The proposed liquidation cost model described herein would include: (1) the decomposition of the defaulter's portfolio into sub-portfolios by underlying security; (2) the creation and calibration of Liquidation Grids used to determine liquidation costs; (3) the calculation of the Vega LC (including a minimum Vega LC charge) for options products; (4) the calculation of Delta LCs for both options and Delta-one products; (5) the calculation of Vega and Delta concentration factors; (6) the calculation of volatility correlations for Vega LCs; (7) the establishment of a STANS margin floor based on the liquidation cost; and (8) conforming changes to OCC's Margin Policy and Stress Testing and Clearing Fund Methodology Description.

The new liquidation cost model would cover the following cleared products in a Clearing Member's portfolio: options on indices, equities, Exchange Traded Funds ("ETFs") and futures; FLEX options; future contracts; Treasury securities; and stock loan and collateral securities. The securities not included in STANS margin calculations would not be covered by the new model.

The proposed approach to calculating liquidation costs and the conforming changes to OCC's Margin Policy are described in further detail below.

1. Portfolio Decomposition and Creation of Sub-portfolios

For a portfolio consisting of many contracts and underlyings, the proposed model would first divide (or decompose) the portfolio into sub-portfolios by underlying security

¹² "Delta one products" refer to products for which a change in the value of the underlying asset results in a change of the same, or nearly the same, proportion in the value of the product.

such that all contracts with the same underlying are grouped into the same sub-portfolio. The Vega LC and Delta LC are first calculated at a sub-portfolio level and then aggregated to derive the final liquidation cost for the total portfolio. All the option positions with the same fundamental underlying would form one sub-portfolio because they share the same risk characteristics. The equity index, index future and index ETFs would all be categorized by the underlying index that is the basis for the index, future, and ETF-underlying securities. The corresponding options on the index, index future, and ETFs would therefore fall into the same sub-portfolio. In addition, FLEX options on the same underlying would be included in the same sub-portfolio of the regular options. Similarly, cash products such as equities and futures would be grouped in the same sub-category based on their underlying symbols. All Treasury security positions would form one sub-portfolio. The calculation of Vega LC and Delta LC for each sub-portfolio is summarized in the next sections.

2. Creation and Calibration of Liquidation Grids

A key element of the proposed liquidation cost model is the “Liquidation Grids.” The calculations of Vega LC and Delta LC involve a number of liquidity-related quantities such as volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional. The collection of these quantities would be used to create the following Liquidation Grids.

1. Vega Liquidation Grids (or volatility grids): the Vega Liquidation Grids would represent the level of bid-ask spreads on the implied volatility of option contracts for a given underlying. Since the volatility spreads of option contracts vary by the Delta and tenor of the option, OCC would divide the contracts into several Delta

buckets by tenor buckets.¹³ Each pair (Delta, tenor) is referred to as a Vega bucket. For each bucket, an average volatility spread is estimated and defined as the volatility grid for the bucket. The size of grid would essentially represent the cost for liquidating one unit of Vega risk in the bucket.

2. Vega Notional Grid: the Vega Notional Grid of an underlying security would be the average trading options volume weighted by the Vega of all options on the given underlying. The size of Vega Notional grids would indicate the average daily trading volume in terms of dollar Vegas (i.e., the Vega multiplied by the volume of the option).
3. Delta Liquidation Grid: the Delta liquidation grid would represent an estimated bid-ask price spread (in percentage) on the underlying.¹⁴ It represents the cost of liquidating one dollar unit of the underlying security. The Delta liquidation grid for Treasury securities represents bid-ask yield spreads, expressed in basis points.
4. Delta Notional Grid: the Delta Notional grid of an underlying security would

¹³ Initially, Vega Liquidation Grids would consist of 5 Delta buckets by 5 tenor buckets, with a total of 25 pairs; however, the Vega Liquidation Grids would be reviewed annually or at a frequency determined by OCC's Model Risk Working Group ("MRWG") and updated as needed as determined by the MRWG. The MRWG is responsible for assisting OCC's Management Committee in overseeing and governing OCC's model-related risk issues and includes representatives from OCC's Financial Risk Management department, Quantitative Risk Management department, Model Validation Group, and Enterprise Risk Management department.

¹⁴ Delta Liquidation Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the cost of liquidating one dollar unit of the underlying security. The Delta Liquidation Grids would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed as determined by the MRWG.

represent the average trading volume in dollars of the security.¹⁵

Vega Notional Grids are calibrated at the security level; that is, each individual underlying security would have its own Vega Notional. The Delta Notional Grid and both Vega and Delta Liquidation Grids for all underlying securities are estimated at the levels of a fixed number of classes based on their liquidity level.¹⁶ All equity securities would be divided, based on their membership in commonly used market indices (including, but not limited to, the S&P 100 and 500 index) or other market liquidity measurements, into liquidity classes (which may include, but are not limited to, High Liquid Equities, Medium Liquid Equities and Low Liquid Equities). Any new equity security would generally default to the lowest liquidity classification unless otherwise assigned to a higher liquidity classification when deemed necessary. Major indices (e.g., SPX or the Cboe Volatility Index (“VIX”)) may form their own index liquidity class, which may cover indices, index ETFs, and index futures. In addition, sector ETFs, ETFs on a major commodity (such as Gold, Crude/Natural Gas, Metals, and Electricity), and Treasury ETFs would generally each form individual classes of their own, subject to the availability of liquidation data. Pursuant to the proposed Margins Methodology, these liquidity classes would be reviewed annually or at a frequency determined by OCC’s

¹⁵ Delta Notional Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the average trading volume in dollars of the underlying security. The Delta Notional Grids would be reviewed annually or at a frequency determined by OCC’s MRWG and updated as needed as determined by the MRWG.

¹⁶ Within the same liquidity group, the Vega Notional can vary dramatically from name to name. Moreover, Vega risk can be much greater than Delta risk. As a result, OCC would calculate Vega Notionals at the security level as opposed to the liquidity level.

MRWG and updated as needed, taking into consideration such factors including, but not limited to, changes in membership of the S&P 100 index and S&P 500 index, listing and delisting of securities, and any corporate actions on the existing securities.

Because the bid-ask spreads can change daily, the use of spreads from current market conditions could cause liquidation costs to fluctuate dramatically with market volatility, especially during a stressed market period. To mitigate this procyclicality issue, Liquidation Grids would be calibrated from several historical stressed periods, which are selected based on the history of VIX index levels and would remain unchanged with time until a new stressed period is selected and added to the calibrations in accordance with the requirements of the proposed Margins Methodology.¹⁷

3. *Vega Liquidation Cost*

Vega Liquidation Cost Calculation

Vega LC is the main component of the proposed liquidation cost model. For a simple option contract, the Vega LC would be its position Vega multiplied by its respective bucket in the Vega Liquidation Grid. The result is approximately equal to one half of the bid-ask price spread. For a portfolio consisting of many contracts and underlyings, the model first divides the portfolio into sub-portfolios by underlying security such that all contracts with the same underlying are grouped into the same sub-portfolio (as described above). The Vega LCs for sub-portfolios are calculated first and then aggregated to derive the Vega LC for the total portfolio.

The Vega LC for a sub-portfolio, which consists of all the contracts with the same

¹⁷ The Liquidation Grids will be reviewed annually or at a frequency determined by the MRWG.

underlying security, would be calculated in several steps. First, the Liquidation Grids would be calibrated for Vega “buckets” that consist of Delta bins by tenor bins as discussed above. These Vega buckets are used to represent the volatility risk at the different areas on the implied volatility surface. Next, the Vega of each contract position in a given sub-portfolio would be calculated and bucketed into one of the Vega buckets. The Vegas falling into the same Vega bucket would then be netted. The Vega LC for each of the Vega buckets is calculated as the net Vega multiplied by the Vega grid of the buckets. Finally, the total liquidation cost for the sub-portfolio would be aggregated from these bucket Vega LCs by using correlations between the Vega buckets. Since the sub-portfolios are formed by the fundamental equity or index underlying the option, the Vega LCs of closely related but different underlying securities are allowed to net. For example, Vega LCs for SPX and related indices, futures, and ETFs that are based on the S&P 500 index would be allowed 100% netting.

The Vega LC for the total portfolio would be a similar correlation-based sum of Vega LCs of all the sub-portfolios, taking into account correlations between the products’ implied volatility.¹⁸

Minimum Liquidation Cost

Because the proposed model allows risk netting across closely related option contracts, it is possible that a well-hedged option strategy could result in a very small or zero liquidation cost. To prevent this from happening, a minimum liquidation cost would be introduced to the Vega liquidation charges. The minimum liquidation cost for a sub-portfolio would be calculated as the gross number of option contracts multiplied by a

¹⁸ See *infra*, *Volatility Correlations* section.

minimum cost per contract value.¹⁹ The minimum cost amount would be calculated for the entire portfolio and would be used to floor the final total Vega LC. The proposal would not apply a minimum cost for Delta LC due to the immaterial impact a minimum Delta LC would have on the overall liquidation cost charge.

4. Delta Liquidation Cost

In addition to Vega risk, the model also considers the Delta risk presented in an entire portfolio. If a portfolio has positions in either options, futures, equities, or Treasury securities, it will contain some Delta risk. Under the proposed model, the liquidation cost due to Delta risk in a sub-portfolio (as defined by the underlying) would be approximated by the net dollar Delta of the sub-portfolio multiplied by its respective bucket in the Delta Liquidation Grid.

The proposed model would allow netting of Delta LC if the option contracts, futures, or equity positions belong to or are related to a top index (such as SPX or VIX). For example, in a portfolio, positions in SPX-related options, options on futures, futures, or collateral have their Delta LC netted.

Under the proposed model, U.S. dollar Treasury bonds would form one sub-portfolio. The Delta or DV01 (i.e., dollar value of one basis point) of all the bonds would be calculated and bucketed into six tenor buckets. For each bucket, the liquidation cost would be approximated by the absolute value of the net DV01 of the bucket multiplied by the Liquidation Grid (in basis points) in the corresponding tenor bucket. The total

¹⁹ The minimum cost rate would initially be set as \$2 per contract, unless the position is long and the net asset value per contract is less than \$2. (For a typical option with a contract size of 100, this would occur if the option was priced below 0.02.) This value would be reviewed annually or at a frequency determined by OCC's MRWG and recalibrated as needed over time.

liquidation cost for the Treasury security sub-portfolio would then be a sum of the costs over all the buckets.

The Delta LC for the total portfolio would be simple sum of the Delta LCs over all sub-portfolios.

5. Concentration Charges

In addition to Vega and Delta LCs, the proposed model also would incorporate the potential risks involved in closing out large or concentrated positions in a portfolio. The “largeness” of an option position is typically measured in terms of Average Daily Volume (“ADV”). The Vega volume or notional, defined as “Vega-weighted ADV,” is also a relevant measure of options trading volume. Closing out large or concentrated positions with one or more Vega notional may either take longer to liquidate or demand wider spreads, and therefore could incur additional cost. To cover this additional risk, the proposed model would use Vega concentration factors (“Vega CF”) to scale the Vega LC for option positions. The Vega CFs would be equal to one for small positions that are less than one Vega notional, but may be scaled up for large positions as a function of the size of the positions. Similar to Vega CF, Delta concentration factors (“Delta CF”) would be used to scale the Delta LC to account for the concentration risk associated with large Delta positions.

6. Volatility Correlations

Under the proposed model, the Vega LC for each underlying sub-portfolio is calculated using correlations between the Vega buckets. The correlation matrix from the most liquid product (SPX) would be used as the base and would be scaled for other underlyings based on their liquidity class. These would be calibrated from time periods

that overlap the stress periods used to calculate Liquidation Grids.

To aggregate the liquidation cost at the portfolio level, the pair-wise correlations of implied volatilities between different underlyings are needed. OCC would use a single correlation value for all cross-underlying correlations rather than a correlation matrix for all cross-underlying correlations to simplify the calibration of the grids. To account for potential errors that may arise from using a single correlation value, OCC would calculate three single correlations representing the minimum, average, and maximum correlation across the liquidity class to determine three different Vega LCs. The highest of these three Vega LCs would be used as the final Vega LC.

7. STANS Margin Floor

The proposed liquidation costs would be added to the base and stress margin components of STANS that are intended to cover the potential losses due to price movements over a two-day risk horizon. In certain cases, well-hedged portfolios may not experience any loss and the resultant STANS margin requirement is close to zero or may even become positive in some extreme cases. If the STANS requirement is positive, this may result in a credit instead of a charge for the Clearing Member. To account for the risk of potentially liquidating a portfolio at current (instead of two-day ahead) prices, no credit from the margin would be allowed so that the final margin requirement would not be lower than the amount of the liquidation cost.

8. Margin Policy and Stress Testing and Clearing Fund Methodology Description

OCC also would make conforming changes to its Margin Policy and Stress Testing and Clearing Fund Methodology Description to reflect the inclusion of the new liquidation cost charge as an add-on charge to the base STANS margin and how the

liquidation cost charge add-on would be incorporated in Clearing Fund shortfall calculations.²⁰

Clearing Member Outreach

To inform Clearing Members of the proposed change, OCC has provided overviews of its proposed liquidation cost model to the Financial Risk Advisory Council (“FRAC”), a working group comprised of exchanges, Clearing Members and indirect participants of OCC, and the OCC Roundtable, which was established to bring Clearing Members, exchanges and OCC together to discuss industry and operational issues,²¹ during 2016 and 2017. OCC has also published Information Memos to all Clearing Members discussing the proposed change.

Under the proposed liquidation cost model, each Clearing Member/account would independently observe different levels of impact based on the composition of their cleared portfolios. Based on OCC’s analysis to-date, directional portfolios containing more outright positions, which are more typically associated with customer accounts, are most likely to see the largest impact from the proposed liquidation cost charges, while

²⁰ The Stress Testing and Clearing Fund Methodology Description would be revised to note that the shortfall of a portfolio is calculated by offsetting its profit and loss (“PnL”) in a stress scenario with its STANS margin assets, which include base margin (i.e., 99% Expected Shortfall), excess net asset value related to long option premium, any non-collateral-in-margins haircut amounts, and various other Add-On Charges such as the proposed liquidation cost charges. Since the cost of liquidation is not considered in stress scenario PnL, a charge for liquidation costs using the same values as calculated for margins is included in shortfall calculations to ensure that the liquidation cost charge is part of the required total credit financial resources.

²¹ The OCC Roundtable is comprised of representatives of the 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.

more well-hedged portfolios, such as market maker accounts, would be less impacted (and are more likely to incur the minimum liquidation cost charge). In the aggregate, OCC expects the proposed liquidation cost charges to make up approximately 5-8% of total risk margin charges, with customer accounts accounting for roughly 60% of the proposed liquidation cost charges, and proprietary accounts and market makers generating approximately 25% and 15% of the proposed liquidation cost charges, respectively.

Given the magnitude of expected changes in margins, OCC expects to conduct an extended parallel implementation for Clearing Members prior to implementation. Additionally, OCC will perform additional outreach to the FRAC upon submission of its regulatory filings to remind Clearing Members of the pending changes and direct outreach with those Clearing Members that would be most impacted by the proposed change and would work closely with such Clearing Members to coordinate the implementation and associated funding for such Clearing Members resulting from the proposed change.²²

Implementation Timeframe

OCC expects to implement the proposed changes no sooner than thirty (30) days and no later than one hundred eighty (180) days from the date that OCC receives all necessary regulatory approvals for the filings. OCC will announce the implementation date of the proposed change by an Information Memo posted to its public website at least two (2) weeks prior to implementation.

²² Specifically, OCC will discuss with those Clearing Members how they plan to satisfy any increase in their margin requirements associated with the proposed change.

Expected Effect on and Management of Risk

OCC believes that the proposed change, which would introduce a new liquidation cost model into OCC's margin methodology, would reduce the overall level of risk to OCC, its Clearing Members, and the markets served by OCC. As described above, STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. These margins are intended to cover the potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation cost OCC may incur in closing out a defaulted Clearing Member's portfolio. Closing out positions in a defaulted portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads. The proposed liquidation cost model would calculate liquidation costs for OCC's cleared products based on risk measures, gross contract volumes and market bid-ask spreads. The proposed model is designed to provide additional financial resources in the form of margin, based on liquidation costs and current market prices, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios. OCC uses the margin it collects from a defaulting Clearing Member to protect other Clearing Members from losses they cannot anticipate or control as a result of such a default. As a result, OCC believes the proposed changes would reduce the overall level of risk to OCC, its Clearing Members, and the markets served by OCC.

Consistency with the Payment, Clearing and Settlement Supervision Act

The stated purpose of the Clearing Supervision Act is to mitigate systemic risk in

the financial system and promote financial stability by, among other things, promoting uniform risk management standards for systemically important financial market utilities and strengthening the liquidity of systemically important financial market utilities.²³

Section 805(a)(2) of the Clearing Supervision Act²⁴ also authorizes the Commission to prescribe risk management standards for the payment, clearing and settlement activities of designated clearing entities, like OCC, for which the Commission is the supervisory agency. Section 805(b) of the Clearing Supervision Act²⁵ states that the objectives and principles for risk management standards prescribed under Section 805(a) shall be to:

- promote robust risk management;
- promote safety and soundness;
- reduce systemic risks; and
- support the stability of the broader financial system.

OCC believes that the proposed changes described herein would enhance its margin methodology in a manner consistent with the objectives and principles of Section 805(b) of the Clearing Supervision Act²⁶ and the risk management standards adopted by the Commission in Rule 17Ad-22 under the Act for the reasons set forth below.²⁷

²³ 12 U.S.C. 5461(b).

²⁴ 12 U.S.C. 5464(a)(2).

²⁵ 12 U.S.C. 5464(b).

²⁶ Id.

²⁷ 17 CFR 240.17Ad-22. See Securities Exchange Act Release Nos. 68080 (October 22, 2012), 77 FR 66220 (November 2, 2012) (S7-08-11) (“Clearing Agency Standards”); 78961 (September 28, 2016), 81 FR 70786 (October 13, 2016) (S7-03-14) (“Standards for Covered Clearing Agencies”). OCC is a “covered clearing agency” as defined in Rule 17Ad-22(a)(5) and therefore must comply with the requirements of Rule 17Ad-22(e).

OCC believes the proposed changes are consistent with the objectives and principles of Section 805(b) of the Clearing Supervision Act.²⁸ As described above, STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. These margins are intended to cover the potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation cost OCC could incur in closing out a defaulted Clearing Member's portfolio. Closing out positions in a defaulted portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads. The proposed model is designed to provide additional financial resources in the form of margin to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios. OCC uses the margin it collects from a defaulting Clearing Member to protect other Clearing Members from losses as a result of the default. As a result, OCC believes the proposed change would promote robust risk management and safety and soundness while reducing systemic risks and would thereby support the stability of the broader financial system.

Rule 17Ad-22(b)(2)²⁹ requires, in part, that a registered clearing agency that performs central counterparty services establish, implement, maintain and enforce written policies and procedures reasonably designed to 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 described above, the proposed liquidation cost

²⁸ 12 U.S.C. 5464(b).

²⁹ 17 CFR 240.17Ad-22(b)(2).

model is a risk-based model that calculates liquidation cost based on risk measures, gross contract volumes, and market bid-ask spreads. The proposed model is designed to provide additional financial resources in the form of margin, based on liquidation costs and current market prices, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios, which currently are not taken into account in STANS for all of OCC's cleared products. Accordingly, the proposed risk-based model would 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).³⁰

Rule 17Ad-22(e)(6)(i)³¹ further requires a covered clearing agency that provides central counterparty services to 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 considers, and produces margin levels commensurate with, the risks and particular attributes of each relevant product, portfolio, and market. The proposed liquidation cost model is a risk-based model that would calculate additional margin charges designed to account for potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios by taking into consideration the risks and attributes associated with relevant products and portfolios cleared by OCC (e.g., volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional). Accordingly, OCC believes the

³⁰ Id.

³¹ 17 CFR 240.17Ad-22(e)(6)(i).

proposed changes are consistent with Rule 17Ad-22(e)(6)(i).³²

III. Date of Effectiveness of the Advance Notice and Timing for Commission Action

The proposed change may be implemented if the Commission does not object to the proposed change within 60 days of the later of (i) the date the proposed change was filed with the Commission or (ii) the date any additional information requested by the Commission is received. OCC shall not implement the proposed change if the Commission has any objection to the proposed change.

The Commission may extend the period for review by an additional 60 days if the proposed change raises novel or complex issues, subject to the Commission providing the clearing agency with prompt written notice of the extension. A proposed change may be implemented in less than 60 days from the date the advance notice is filed, or the date further information requested by the Commission is received, if the Commission notifies the clearing agency in writing that it does not object to the proposed change and authorizes the clearing agency to implement the proposed change on an earlier date, subject to any conditions imposed by the Commission.

OCC shall post notice on its website of proposed changes that are implemented. The proposal shall not take effect until all regulatory actions required with respect to the proposal are completed.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the advance notice is consistent with the Clearing Supervision Act. Comments may be submitted by any of the following

³² Id.

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-2019-802 on the subject line.

Paper Comments:

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549.

All submissions should refer to File Number SR-OCC-2019-802. 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 advance notice that are filed with the Commission, and all written communications relating to the advance notice between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of 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-2019-802 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

By the Commission.

Secretary

EXHIBIT 3

[Redacted Pursuant to Rule 24b-2]

[Redacted Pursuant to Rule 24b-2]

EXHIBIT 3A

[Redacted Pursuant to Rule 24b-2]

[Redacted Pursuant to Rule 24b-2]

EXHIBIT 3B

[Redacted Pursuant to Rule 24b-2]

[Redacted Pursuant to Rule 24b-2]

EXHIBIT 3C

[Redacted Pursuant to Rule 24b-2]

[Redacted Pursuant to Rule 24b-2]

EXHIBIT 3D

[Redacted Pursuant to Rule 24b-2]

[Redacted Pursuant to Rule 24b-2]

EXHIBIT 5A

[Redacted Pursuant to Rule 24b-2]

EXHIBIT 5B

[Redacted Pursuant to Rule 24b-2]

[Redacted Pursuant to Rule 24b-2]

EXHIBIT 5C

[Redacted Pursuant to Rule 24b-2]

[Redacted Pursuant to Rule 24b-2]

[Redacted Pursuant to Rule 24b-2]