



**THE FOUNDATION
FOR SECURE
MARKETS**

THE OPTIONS CLEARING CORPORATION
DISCLOSURE FRAMEWORK FOR
FINANCIAL MARKET INFRASTRUCTURES



Responding Institution:	The Options Clearing Corporation
Jurisdiction in which the FMI Operates:	United States
Authority regulating, supervising or overseeing the FMI:	U.S. Securities and Exchange Commission U.S. Commodity Futures Trading Commission Board of Governors of the Federal Reserve

The date of this disclosure is ~~March 25~~June 10, 2021.

This disclosure can also be found at: <https://www.theocc.com/Risk-Management/PFMI-Disclosures>.

For further information, please contact PFMIdisclosures@theocc.com.



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I. EXECUTIVE SUMMARY

The following disclosure constitutes the response of The Options Clearing Corporation, a Delaware corporation, to the Disclosure Framework for Financial Market Infrastructures developed by the Committee on Payments and Market Infrastructures and the Technical Committee of the International Settlements and the International Organization of Securities Commissions. This Disclosure Framework is updated following any material changes to OCC's systems or environment or, at a minimum, every two years. This Disclosure Framework provides relevant information regarding the methods that OCC uses to manage the risks it faces as a central counterparty. In addition, this document facilitates OCC's compliance with SEC Rule 17Ad-22(e)(23).¹

II. SUMMARY OF MAJOR CHANGES SINCE LAST UPDATE

The primary changes to this disclosure since the last publication in ~~December 2020~~ March 2021 are:

- ~~• Adding a sentence to the end of the Legal and Regulatory Framework discussion in General Background on OCC (Section III, below), recognizing that OCC has elected to become a subpart C derivatives clearing organization under CFTC Regulation 39.31.~~
- ~~• Revising the third paragraph of the disclosure for Principle 4, Key Consideration 1 to reflect the implementation of OCC's Third Party Risk Management Framework and the retirement of the Counterparty Credit Risk Management Policy.~~
- ~~• Revising the fourth paragraph of the disclosure for Principle 6, Key Consideration 1 to reflect the implementation of OCC's new description document for the STANS methodology and the retirement of the Margins Methodology document.~~
- ~~• Deleting the first sentence to Principle 8, Key Consideration 3. While daily cash settlements ordinarily are initiated by OCC, clearing members submit cash withdrawal and draft requests as well.~~
- Revising the discussion of the allocation of losses in Principle 4, Key Consideration 7 and Principle 13, Key Consideration 1 to reflect amendments to OCC's Rules and Capital Management Policy that (i) established a persistent minimum level of OCC's own resources that OCC shall contribute in the event of a member default to cover losses or liquidity shortfalls; and (ii) permit OCC to apply liquid net assets greater than 110% of target capital ("Early Warning") to losses caused by the failure of a bank or other clearing organization.
- Revising Principle 15, Key Consideration 5 to carry through use of the defined term "Early Warning."

III. GENERAL BACKGROUND ON OCC

General Description of OCC

OCC, founded in 1973, is the world's largest equity derivatives clearing organization. OCC's

¹ 17 CFR 240.17Ad-22(e)(23).

mission is to provide market participants with innovative risk management solutions and provide high quality and efficient clearing and settlement services for options, futures, and other financial transactions. OCC also values the important role it plays in educating investors and the public about the prudent use of options and futures markets. As a systemically important institution, OCC recognizes its critical role in promoting financial stability and integrity in every market it serves.

OCC issues and clears U.S.-listed options and futures on a number of underlying financial assets including common stocks, currencies, and stock indices. OCC's clearing membership consists of approximately 105 of the largest U.S. broker-dealers, U.S. FCMs, and Canadian securities firms representing both professional traders and public customers. OCC performs a guarantee function, which ensures the financial integrity of the markets in which it clears contracts. In its role as guarantor and central counterparty, OCC ensures that the obligations of the contracts it clears are fulfilled. Through a novation process, OCC becomes the buyer for every seller and the seller for every buyer, thus protecting clearing members from counterparty risk and allowing the settlement of trades in the event a clearing member fails to meet its obligations. OCC does not assume any guarantor role unless it has a precisely equal and offsetting claim against a clearing member. OCC's obligations under the guarantee arise in the event a clearing member is unable to meet its obligations to OCC. Margin deposits and Clearing Fund deposits are required to collateralize clearing members' obligations and thus support OCC's guarantee.

The Markets OCC Serves

OCC is the sole clearing organization for all securities options exchanges in the United States. Additionally, OCC clears transactions in commodity futures products and security futures traded on several additional markets and acts as a central counterparty for stock loan transactions. A current list of the exchanges, trading markets and trade sources for which OCC provides clearing services is found OCC's website.²

Data on Services and Operations

For the most recent data on OCC's volume by product type, exposures to participants, operational reliability, and other key data please refer to the PFMI Quantitative Disclosure, found at the following link: <https://www.theocc.com/Risk-Management/PFMI-Disclosures>.

Legal and Regulatory Framework

OCC is owned equally by five of the options exchanges for which it provides clearing services.³ This ownership, along with a diverse clearing member, participant exchange, Public Director, and management presence on OCC's Board, ensures a continuing commitment to servicing the needs of OCC's participant exchanges, clearing members, and their customers. OCC's Board sets clearing fees based upon the current funding needs of OCC. OCC's Rules set forth its governance structure. The oversight of OCC's business and affairs is vested in its Board. The Board's composition is intended to provide accountability to all relevant stakeholders. The Board maintains six Committees – the Audit Committee, the Compensation and Performance Committee, the Governance and Nominating Committee, the Regulatory Committee, the Risk

² <https://www.theocc.com/Clearance-and-Settlement/Participant-Exchanges>.

³ The five owners are the Chicago Board Options Exchange, Inc., International Securities Exchange LLC, NASDAQ OMX PHLX, LLC, NYSE MKT LLC, and NYSE Arca, Inc. The NYSE exchanges are owned by a common parent and the International Securities Exchange is owned by NASDAQ. As a result, ownership is essentially consolidated to three entities although each Equity Exchange has one Exchange Director representative on the Board.



Committee, and the Technology Committee, each responsible for specific oversight functions. OCC’s management ultimately is responsible to the Board. OCC’s corporate risk and internal audit functions report directly to the Board Risk and Audit Committees, respectively, ensuring independence from management.

OCC is registered as a clearing agency under Section 17A of the Securities Exchange Act and as a derivatives clearing organization under Section 7a-1 of the Commodity Exchange Act and operates under the jurisdiction of both the SEC and the CFTC. OCC has also been designated by FSO as a “systemically important” financial market utility under Title VIII of the Dodd-Frank Act.⁴ For purposes of Title VIII, the SEC is OCC’s supervisory agency. OCC has also elected to become a subpart C derivatives clearing organization under CFTC Regulation 39.31.

The regulatory jurisdiction for the different options and futures contracts cleared by OCC are shown below.

Product	Regulator
Options on common stocks and other equity issues	SEC
Options on debt securities	SEC
Options on stock indices	SEC
Options on volatility, variance and strategy-based indices	SEC
Options on foreign currencies	SEC
Futures other than security futures	CFTC
Options on commodity futures	CFTC
Security futures	CFTC and SEC (although OCC clears in its capacity as a SEC-regulated clearing agency)

System Design and Operations

OCC supports near real-time trade, post-trade validation and position processing through its clearing system, ENCORE. Each exchange for which OCC clears transactions submits confirmed options and/or futures trades that have been effected on or through the facilities of the exchange to OCC. Upon OCC’s acceptance of such a submitted trade, OCC is substituted through novation as the buyer to the seller and the seller to the buyer. Accepted trades and post-trade transactions (e.g., trade allocations, position adjustments, transfers, etc. submitted by clearing members) update clearing member positions on a near real-time basis within the ENCORE system.

Trades are sent to OCC throughout the trading day on a near real-time basis, and each

⁴ Pub. L. No. 111-203, 124 Stat. 1376 (2010).



exchange reports to OCC information with respect to each confirmed trade at the end of the day. Based on this information, OCC delivers a Daily Position Report each morning to each clearing member with respect to each clearing member account, listing all of the clearing member’s confirmed trades that are settling on that day and any net daily premiums or futures variation margin due to or from OCC as a result of these trades.

OCC employs the proprietary STANS margin methodology to calculate margin requirements based on the position portfolio within ENCORE for each clearing member account. Each morning, OCC makes available to each clearing member a Daily Margin Report for each account, showing the amount of initial margin required by OCC on the clearing member’s marginable positions in each account.

Each clearing member is obligated to pay to OCC an amount equal to any reported deficit by the established cut-off time. Additionally, at or before the “settlement time” as indicated in OCC’s Rules, the clearing member will be obligated to pay to OCC the amount of any net daily premium and variation payment due to OCC. OCC is authorized to withdraw funds from the clearing member’s applicable bank account with respect to any amounts due. OCC may also require the deposit of additional “intra-day” margin by any clearing member in any account at any time during any business day.

IV. GLOSSARY OF TERMS AND ABBREVIATIONS

Bankruptcy Code:	U.S. Bankruptcy Code
Board:	OCC’s Board of Directors
Cash Agreement	An agreement entered into by OCC and a settlement bank covering cash settlement procedures
CCO:	Cross-Margining Clearing Organization
CEO:	OCC’s Chief Executive Officer
CFTC:	U.S. Commodity Futures Trading Commission
Clearing Fund:	OCC’s clearing or guarantee fund
Clearing Member:	A person or organization that has been admitted to membership in OCC under the Rules
CME:	CME Clearing
Committee:	One of the various committees of the Board
Commodity Exchange Act:	Commodity Exchange Act of 1936, as amended
Confirmed Trade:	A purchase, writing or sale of options contracts, security futures, commodity futures, futures options or commodity options that are effected on or through the facilities of an exchange and submitted to OCC for clearance or affirmed through the facilities of any electronic



messaging system approved by OCC through which transactions in over-the-counter options are submitted to OCC for clearance

COO: OCC's Chief Operating Officer



CPMI-IOSCO:	The Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions
DvP:	Delivery versus payment
DCO:	A derivatives clearing organization registered with the CFTC
Director:	Each member of the Board
Dodd-Frank Act:	The Dodd-Frank Wall Street Reform and Consumer Protection Act
DTC:	The Depository Trust Company
ENCORE:	OCC's ENCORE clearing system
ETN:	Exchange-traded note
Executive Chairman:	OCC's Executive Chairman
Exchange Director:	A member of the Board that represents one of the Equity Exchanges
FCM:	Futures Commissions Merchant
FDICIA:	U.S. Federal Deposit Insurance Corporation Improvement Act
FICC:	Fixed Income Clearing Corporation
FMU:	Financial Market Utility
FSOC:	U.S. Financial Stability Oversight Council
IT:	Information technology
Management Director:	An employee of OCC who also serves as a Director
NSCC:	National Securities Clearing Corporation
NSCC Accord:	Stock Options and Futures Settlement Agreement by and between OCC and NSCC
OCC:	The Options Clearing Corporation
OIC:	The Options Industry Council
Participating CCO:	Refers to CME
Participant Exchange:	One of the exchanges that clears confirmed trades in listed options through OCC



Rules:	OCC's By-Laws, Rules, and documents which OCC has filed pursuant to Section 19(b) of the Securities Exchange Act as rules
SEC:	U.S. Securities and Exchange Commission
Securities Exchange Act:	Securities Exchange Act of 1934, as amended
Security Futures:	Futures on equity issues and narrow-based stock indices
SIFMU:	Systemically Important Financial Market Utility, pursuant to Title VIII
SIPC:	Securities Investor Protection Corporation
SPAN:	Standard Portfolio Analysis of Risk margin system developed by the Chicago Mercantile Exchange
SROs:	Self-Regulatory Organizations, under Section 3(a)(26) of the Securities Exchange Act and "registered entities" under the Commodity Exchange Act
STANS:	OCC's System for Theoretical Analysis and Numerical Simulations
Stockholder Exchange:	One of the exchanges that is a holder of OCC's Class B Common Stock
Title VIII:	Title VIII of the Dodd-Frank Act
U.S.:	United States of America
VaR:	Value-at-Risk

Note: All times referenced in this Disclosure Framework are Central Time.

V. PRINCIPLE-BY-PRINCIPLE NARRATIVE

A narrative response to each Principle and the corresponding Key Considerations, as well as the associated SEC Rule under 17 CFR 240.17Ad-22(e), is provided below.

**Principle 1: LEGAL BASIS;
SEC Rule 17Ad-22(e)(1)**

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

SEC Rule 17Ad-22(e)(1) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to provide for a well-founded, clear, transparent, and enforceable legal basis for each aspect of its activities in all relevant jurisdictions.

Key Consideration 1

The legal basis should provide a high degree of certainty for each material aspect of an FMI’s activities in all relevant jurisdictions

The legal basis for each material aspect of OCC activities is established in: OCC’s Rules and By-Laws; the Securities Exchange Act and the Commodity Exchange Act; SEC and CFTC Rule and Regulations; certain other U.S. laws including the Bankruptcy Code and the FDICIA as they relate to close-out netting; Articles 8 and 9 of the Uniform Commercial Code as they relate to OCC’s interests in posted collateral; legal opinions regarding the enforceability of netting and bankruptcy remoteness of collateral; and material agreements governing contractual relationships with settlement banks, pre-arranged liquidity agreements, service providers, custodians, exchanges and cross-margin counterparties.

The material aspects of OCC’s activities are related to its role as a central counterparty guarantor and regard the rights and obligations of OCC, its members, and other relevant stakeholders. These activities include: membership standards, clearing member obligations, specific transaction/trade terms, posting of Clearing Fund and margin, establishment of accounts, suspension/liquidation of clearing members, sufficient capital, novation, settlement finality, bankruptcy remote collateral, enforceability of netting and close-out netting.

The relevant jurisdictions for OCC’s activities are Delaware, New York, Connecticut, District of Columbia, Illinois, and Texas, where OCC is authorized to do business. OCC is formed as a Delaware corporation, duly organized and in good standing under Delaware law. Its core organizational issues, including its basic corporate powers and corporate governance, are governed by its Restated Certificate of Incorporation, its By-Laws, its Rules and Delaware law. Delaware was chosen as OCC’s domicile because of the predictability of its law.

Key Consideration 2

An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.

OCC’s Rules and changes thereto are subject to regulatory review. Most Rule changes relating to OCC’s business as a covered clearing agency must be approved prior to implementation. Where prior approval by the SEC is not required, such Rules are subject to either a 30-day waiting



period prior to effectiveness, during which the SEC could institute disapproval proceedings, or the SEC’s authority to temporarily suspend the change.⁵

Rule changes may be filed with the CFTC for prior approval or filed with the CFTC pursuant to a certification process. Rule changes filed with the CFTC pursuant to a certification process are subject to a ten business day waiting period, during which the CFTC can stay effectiveness of the change.⁶

Certain Rule amendments, such as non-substantive revisions to Rules, may be made effective without filing with the CFTC so long as OCC provides the CFTC with notification no less frequently than weekly summarizing all such Rule amendments made effective in the preceding week.⁷ Regulatory oversight by the SEC and CFTC serves to ensure that OCC’s Rules are consistent with applicable laws and regulations.

OCC maintains clear, written internal policies and procedures to support its operations in accordance with the applicable requirements under SEC Rule 17Ad-22 and corresponding CFTC regulations. When OCC contracts with third parties, OCC enters into clear, written agreements governed by Illinois law or the law of another acceptable jurisdiction. OCC also maintains a program to identify and periodically review those agreements which it deems to be critical to its clearance and settlement operations or activities.

Key Consideration 3:

An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants’ customers, in a clear and understandable way.

Each regulatory filing OCC submits with its regulators for approval of a Rule change or material operational change must have a description of the reasons that the filing is consistent with the relevant statute and regulations. The Rule filing, including the explanation of its legal basis, is available on OCC’s public website upon submission to the applicable regulator,⁸ and remains on OCC’s public website until OCC is authorized to implement the changes described in the filing. OCC also publishes informational memoranda from time-to-time describing changes to its Rules or other matters relating to the legal basis for its activities, and information memoranda are also available on its website and are disseminated through a free email alert system for registered users.

⁵ See Securities Exchange Act Section 19(b); SEC Rule 19b-4.

⁶ See Commodity Exchange Act Section 5c(c). See also CFTC Regulation 40.6.

⁷ See CFTC Regulation 40.6(d).

⁸ See <https://www.theocc.com/Company-Information/Documents-and-Archives/By-Laws-and-Rules>.

**Key
Consideration 4:**

An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.

The authority for the enforceability of OCC’s Rules is well established by statute and judicial decisions, although OCC monitors legislative action and judicial decisions for developments that may affect this enforceability.

Insofar as OCC’s Rules pertain to its activities as a covered clearing agency,⁹ they are enforceable by OCC under the enforcement authority provided by the Securities Exchange Act.¹⁰

Relevant to OCC’s activities as a DCO is Section 5b(c)(2)(H) of the Commodity Exchange Act, which requires a DCO to “maintain adequate arrangements and resources for . . . the effective monitoring and enforcement of compliance with the rules of the [DCO].” Section 39.17(a)(2) of the CFTC’s regulations provides that a DCO has the authority to “discipline, limit, suspend, or terminate the activities of a clearing member due to a violation by the clearing member of any rule” of the DCO. The SEC and CFTC also have relevant enforcement authority as outlined in Section 19(h) of the Securities Exchange Act and Section 6b of the Commodity Exchange Act.

As a covered clearing agency, OCC is a “self-regulatory organization” under Section 3(a)(26) of the Securities Exchange Act, and as a DCO OCC is a “registered entity” under the Commodity Exchange Act. Although the terminology in the Securities Exchange Act and Commodity Exchange Act is different, SROs and registered entities have similar functions and authority under the two statutes and are referred hereto as “SROs.” SROs include, among other organizations, stock options and futures exchanges. In general, U.S. court have found that the rules of SROs may be enforced against participants.¹¹

⁹ See Section 17A of the Securities Exchange Act, and SEC Rules 17Ad-22 and 17Ab2-2 thereunder.

¹⁰ See, e.g., Section 19(b)(3)(C) of the Securities Exchange Act (“[a]ny proposed rule change of a self-regulatory organization [such as OCC] which has taken effect pursuant to subparagraph (A) or (B) of this paragraph may be enforced by such organization to the extent it is not inconsistent with the provisions of this title, the rules and regulations thereunder, and applicable federal and state law”); Section 19(g)(1) of the Securities Exchange Act (a “self-regulatory organization [such as OCC] shall comply with the provisions of this title, the rules and regulations thereunder, and its own rules, and (subject to the provisions of Section 17(d) of this title, paragraph (2) of this subsection, and the rules thereunder) absent reasonable justification or excuse enforce compliance . . . in the case of a registered clearing agency, with its own rules by its participants”).

¹¹ See, e.g., *McMahon v. Chicago Mercantile Exchange*, 221 Ill. App. 3d 935, 944 (Ill. App. Ct. 1st Dist. 1991) (court found that a stock or commodity exchange “has the power to adopt and enforce reasonable rules to govern its members”); *PTR, Inc. v. SEC*, 159 Fed. Appx. 338, 340 (3d Cir. 2005) (court found that under the Securities Exchange Act a registered stock exchange was permitted “to promulgate rules regulating the conduct of members and enforce those rules through disciplinary proceedings and the imposition of sanctions”); *McDaniel v. Wells Fargo Investments, LLC*, 717 F.3d 668 (9th Cir. 2013) (defendant broker-dealer had, as a means of complying with federal law and SRO rules designed to prevent insider trading, prohibited employees from maintaining self-directed brokerage accounts with outside firms, and court found that the federal law and the SRO rules preempted a California statute prohibiting forced patronage of the employer’s business).

In addition to their enforceability under the Securities Exchange Act and Commodity Exchange Act, OCC's clearing members contractually agree to be bound by OCC's Rules and such Rules are generally enforceable against clearing members under applicable contract law.¹²

The enforceability of OCC's liquidation Rules and procedures in the event of an insolvency of a clearing member, or close-out netting Rules in the event of the insolvency of OCC, is of particular importance. The Bankruptcy Code contains express provisions that, in the event of the insolvency of a clearing member or of OCC, would provide for the protection of contractual rights, including contractual rights arising under the rules of a clearing organization, to terminate cleared contracts and to net resulting assets and liabilities, including collateral held in connection with such contracts, under a "master netting agreement." Enforceability of contractual rights to cause the termination, liquidation or acceleration of, or to offset or net termination values, payment amounts or other transfer obligations arising under or in connection with securities contracts, commodity contracts, master netting agreements, and certain other financial contracts are generally protected (subject to narrow exceptions) against stays, avoidance or other limitations under the Bankruptcy Code that could otherwise prevent enforcement of such rights against a debtor in a proceeding under the Bankruptcy Code.¹³

For purposes of the provisions of the Bankruptcy Code that protect contractual termination and netting rights, the term "securities contract" is broad enough to cover, among other instruments, options cleared by OCC that are subject to the jurisdiction of the SEC. Contractual rights of commodity brokers – including DCOs such as OCC – and financial participants to cause the liquidation, termination, or acceleration of commodity contracts upon bankruptcy are similarly protected. The term "commodities contract" is broad enough to cover, among other instruments, futures, and other instruments subject to the jurisdiction of the CFTC that are cleared by OCC. In addition to the protections in the Bankruptcy Code, provisions of FDICIA applicable to "clearing organization netting" protect the enforceability of the clearing organization's netting rules by overriding "any other provision of State or Federal law" with certain limited exceptions. Although the above provisions are complex and subject to exceptions, by generally allowing settlements, and liquidations, to proceed in accordance with OCC's Rules notwithstanding the filing of a bankruptcy petition against

¹² See, e.g., *Case & Co., Inc. v. Board of Trade of City of Chicago*, 523 F.2d 355, 358 (7th Cir. 1975), (court noted that "[r]ules' adopted by the Board's membership and 'regulations' adopted by its directors govern trading in commodities futures on the exchange and are incorporated into every contract"); *Gold v. SEC*, 48 F.3d 987, 992 (7th Cir. 1995), (court found that a stock exchange had jurisdiction over a former associated person of a member firm pursuant to its own rule because by registering as an associated person with the member firm the individual "consented to submit to the jurisdiction of the [exchange] and agreed to abide by all its rules and regulations").

¹³ See, e.g., Sections 362(b)(6) and 561 of the Bankruptcy Code; Section 404 of FDICIA.



OCC or a clearing member, OCC has determined that they provide significant protection to the enforceability of OCC's Rules in the event of an insolvency of the clearing member or of OCC. OCC monitors changes in the laws, regulations, and rules applicable to OCC and revises its Rules as necessary.

Key Consideration 5:

An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

The legal risk to OCC arising from conflicts of laws is limited because OCC operates exclusively in the U.S. In furtherance of its policy of mitigating any conflict of laws risks that may exist, OCC includes a choice of law and forum selection provision in Article IX, Section 10 of its By-Laws (Choice of Law and Forum Selection) as well as in its Clearing Member Agreement. Article IX, Section 10 of the By-Laws and the Clearing Member Agreement make it clear that Illinois law and U.S. federal law, without regard to conflict of law principles, govern the application and interpretation of the Rules and all other agreements with clearing members, unless otherwise agreed by OCC. Article IX, Section 10 of the By-Laws and the Clearing Member Agreement further require that any disputes between a clearing member and OCC arising out of or relating to the Rules will be heard in a federal or state court in Chicago, Illinois. OCC has determined that the Illinois choice of law provision should be enforceable given that OCC's principal place of business is in Chicago, Illinois. When possible, OCC generally includes similar choice of law or forum provisions in any contracts tied to its core clearing functions, designating Illinois or New York law.

Where OCC's activities and relationships extend outside the U.S., OCC engages local counsel to identify and mitigate any legal risks arising from the application of non-U.S. law.

**Principle 2: GOVERNANCE;
SEC Rule 17Ad-22(e)(2)**

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

SEC Rule 17Ad-22(e)(2) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to provide for governance arrangements that are clear and transparent, clearly prioritize the safety and efficiency of the covered clearing agency, support the public interest requirements in Section 17A of the Securities Exchange Act and the objectives of owners and participants; establish that the board of directors and senior management have appropriate experience and skills to discharge their duties and responsibilities; specify clear and direct lines of responsibility; and consider the interests of participants' customers, securities issuers and holders, and other relevant stakeholders of OCC.

**Key
Consideration 1**

An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.

OCC annually establishes corporate goals and objectives that explicitly consider the unique role that OCC plays in the financial markets, particularly in its role as a SIFMU, covered clearing agency and DCO, and OCC's commitment to providing highly reliable clearing and settlement services. In 2018 OCC's corporate objectives included focus on enhancing its financial risk management capabilities, information security controls, clearing and settlement platform, and strategic planning framework.

**Key
Consideration 2**

An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.

OCC's Rules set forth its governance structure. The management of OCC's business and affairs is vested in its Board. OCC's Board consists of member directors, exchange directors, public directors and one management director.

OCC's Executive Chairman has direct management responsibilities for OCC's government relations, communications, and internal audit functions.

OCC's CEO, who reports to the Board, has oversight responsibilities for OCC's information technology, financial risk management, corporate risk management, legal and compliance functions.

OCC's COO, who reports to the CEO, has oversight responsibilities for OCC's operations, project management, business process optimization functions, finance, business development and human resources.

Biographies of OCC’s executive team members can be found on its public website.¹⁴

Key Consideration 3:

The roles and responsibilities of an FMI’s board of directors should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.

Board Responsibilities

As described in the Board Charter and Corporate Governance Principles, which is publicly available on OCC’s website, the Board has certain specified functions – which it carries out either directly or indirectly by delegating certain responsibilities to its various Board Committees. These management oversight functions include, but are not limited to, the following:

- Overseeing OCC’s governance structures and processes to ensure that the Board is positioned to fulfill its responsibilities effectively and efficiently consistent with these Principles and regulatory requirements, including through regular assessments of Board and individual director performance;
- Ensuring that the Board and senior management have appropriate experience and skills to discharge their respective responsibilities and have established clear and direct lines of responsibility between the Board and senior management;
- Ensuring that risk management and internal audit personnel have sufficient authority, resources, independence from management, and access to the Board;
- Ensuring that risk management and internal audit personnel have a direct reporting line to, and oversight by, a risk management committee and an independent audit committee of the Board, respectively;
- Ensuring that the audit committee of the Board is independent as determined by the Board;
- Periodically reviewing and approving the amount of compensation for Public Directors;
- Setting expectations about the tone and ethical culture of OCC, and reviewing management’s efforts to instill an appropriate tone and culture throughout OCC;

¹⁴ <https://www.theocc.com/Company-Information/Executives>.

- Overseeing management's activities in managing and operating OCC and evaluating senior management's performance in executing its responsibilities;
- Selecting and overseeing and, where appropriate, replacing the Executive Chairman, CEO and COO, as well as counseling and advising such officers in the management of OCC's business and affairs;
- Overseeing the development and design of employee compensation, incentive, and benefit programs and evaluating the performance of the Executive Chairman, CEO and COO, and approving the compensation of each such officer;
- Overseeing management succession planning and talent management processes;
- Overseeing OCC's business strategies, including expansions of clearing and settlement services to new business lines and product types, to ensure they reflect the legitimate interests of relevant stakeholders and are consistent with the public interest;
- Monitoring OCC's performance in delivering clearance and settlement services;
- Reviewing and approving major corporate plans and actions, including capital expenditures, the annual budget and corporate plan, financial objectives, operating capital and capital structure, and fee structure, as well as periodically reviewing the types and amounts of insurance coverage available in light of OCC's clearing and settlement operations;
- Overseeing OCC's processes and framework for comprehensively managing the range of risks that arise in or are borne by OCC, including the risk management policies, procedures, and systems designed to identify, measure, monitor, and manage such risks consistent within the risk appetite and risk tolerances approved by the Board;¹⁵
- Assigning responsibility and accountability for risk decisions and overseeing the establishment of policies addressing decision-making in crises and emergencies;
- Overseeing and approving OCC's recovery and resolution plan;
- Overseeing OCC's financial reporting, internal and external auditing, and accounting and compliance processes, including the approval of major changes in auditing and accounting principles and practices;

¹⁵ OCC's Risk Tolerances are described under Principle 3 below.

- Overseeing OCC's processes designed to ensure compliance with applicable laws and regulations, including banking, securities, and corporation laws and other applicable regulatory guidance and standards, and overseeing OCC's processes designed to conduct business in a legal and ethical manner;
- Overseeing OCC's system of internal controls, including review of the annual study and evaluation of OCC's system of internal accounting controls;
- Overseeing OCC's technology infrastructure, resources, and capabilities to ensure resiliency with regard to OCC's provision of its clearing, settlement, and risk management services; and
- Performing such other functions as the Board believes appropriate or necessary, or as otherwise prescribed by rules or regulation, including OCC's By-Laws and Rules.

OCC's Rules set forth additional functions and responsibilities for the Board, including, but not limited to:

- Determining disqualifications from Board service and making appointments to fill Board vacancies;
- Electing designated corporate officers;
- Approving OCC's fee schedule, consistent with the applicable policies;
- Except when otherwise approved pursuant to delegated authority, approving additions to, amendments of, and deletions from the Rules;
- Conducting convened hearings in connection with a suspension determination;
- Suspending a clearing member; and
- Performing any other functions reserved to the Board under the Rules.

Each Director is required to act in good faith in the best interests of OCC and with due regard to the fiduciary responsibilities owed to OCC as a business and SIFMU, including the duty of care, duty of loyalty, and duty of confidentiality. In addition, each Director is required to comply with the provisions of the Board's "Code of Conduct," including, without limitation, the provisions relating to conflicts of interest and confidentiality. Each Director is required to certify that he or she has received and agrees to abide by the provisions of the Code of Conduct. Additionally, while the Board is responsible for reviewing its own performance, the Governance and Nominating Committee is tasked with developing and recommending to the Board, and coordinating and providing oversight of, the annual process of self-evaluation of the Board's role and performance. The Governance and Nominating Committee also evaluates incumbent Public

and Member Directors for potential re-nomination, taking into consideration, among other things, an incumbent Director's past performance, including attendance at meetings, participation and contributions to the activities of the Board and their adherence to OCC's Fitness Standards for Board Members.

Members of the Board are full board members of the National Association of Corporate Directors. This membership underscores OCC's commitment to the highest standards of corporate governance and board leadership.

Board Processes

Regular meetings of the Board are held at such times and at such places as are from time to time provided by resolution of the Board. Special meetings may be called as provided for in the Rules. The Executive Chairman, in consultation with the CEO and COO, other directors or officers of OCC, and the Corporate Secretary, establish the agenda for each Board meeting. With respect to each Board Committee, the chair of each such Committee is responsible for establishing the agenda for each meeting. A Director may request that an item be included on any meeting agenda. The Executive Chairman may ask members of management or others to attend the meeting and provide pertinent information as necessary. The Board may call executive sessions from which guests of the Board may be excluded.

In addition to the Executive Chairman, the Board also elects a Member Vice Chairman, who is elected by the Board from the Member Directors, as well as a Secretary and Treasurer, who need not be members of the Board at their time of election. The Board may also, but is not required to, elect one or more Vice Presidents or such other officers as it may determine is necessary from time to time.

Addressing Conflicts of Interest

The Board's Code of Conduct requires that any Director having an actual or apparent conflict of interest in a matter to be acted upon by the Board or a Committee disclose the conflict prior to the discussion or presentation of the matter. The Code of Conduct provides that, if possible, the conflict should be disclosed to the Executive Chairman and to OCC's General Counsel in advance of the meeting. Under the Code of Conduct, the Director should consider whether it is advisable under the circumstances to recuse himself or herself from the discussion and/or vote and must recuse himself or herself if requested by the chair of the meeting.

A conflict of interest is present whenever the interests of OCC compete with the interests of a director, the director's employer, or any other party with which a director is affiliated, or otherwise whenever a director's corporate or personal interests could be reasonably viewed as affecting the director's objectivity in fulfilling his or her duties to OCC. As set forth in the

Board's Code of Conduct, each Director is expected to err on the side of caution and immediately bring to the attention of the Executive Chairman and OCC's General Counsel any matters that may involve conflicts of interest or be reasonably perceived by others to raise questions about potential conflicts, even if the director does not believe that an actual conflict exists. Additionally, each Director must complete an annual Conflicts of Interest Questionnaire, disclosing any actual, potential or apparent conflicts, and must promptly disclose any relevant changes in circumstances.

The Governance and Nominating Committee is tasked with regularly reviewing and recommending to the Board improvements, as applicable, to this conflict of interest policy and the Board's Code of Conduct.

Board Committees

The Board currently maintains six Committees: the Audit Committee, the Compensation and Performance Committee, the Governance and Nominating Committee, the Regulatory Committee, the Risk Committee, and the Technology Committee.¹⁶

Audit Committee

The Audit Committee assists the Board in overseeing OCC's financial reporting process, system of internal control, compliance and legal risks, and auditing, accounting, and compliance processes. The Audit Committee also advises management regarding these aspects of OCC's operation.

Compensation and Performance Committee

The Compensation and Performance Committee assists the Board with overseeing OCC's general business, regulatory capital, investment, corporate planning, compensation and human capital risks, as well as executive management succession planning and performance assessment, including recommending to the Board for approval the annual compensation awards of the Executive Chairman, CEO and COO. The Compensation and Performance Committee also advises management regarding these aspects of OCC's operation.

Governance and Nominating Committee

The Governance and Nominating Committee assists the Board in overseeing OCC's corporate governance processes, including assessing that OCC's governance arrangements are clear and transparent, establishing the qualifications necessary for Board service to ensure that the Board is able to discharge its duties and responsibilities, identifying and recommending to the Board candidates eligible for service as Public

¹⁶ OCC's Board and Board committee charters are available on OCC's public website: <https://www.theocc.com/about/corporate-information/board-charter>.

Directors and Member Directors, and resolving certain conflicts of interests. The Governance and Nominating Committee also advises management regarding these aspects of OCC's operation.

Regulatory Committee

The Regulatory Committee assists the Board in overseeing OCC's efforts to demonstrate compliance with its regulatory obligations, as well as applicable regulatory guidance and standards, while conducting OCC's core clearance and settlement activities. The Regulatory Committee also oversees OCC's Regulatory Compliance Oversight Group, a working group established by OCC management.

Risk Committee

The Risk Committee assists the Board in overseeing OCC's financial, collateral, risk model and third-party risk management. The Risk Committee oversees OCC's overall enterprise risk management framework, which includes: (i) membership criteria and financial safeguards, (ii) member and other counterparty risk exposure assessments, (iii) liquidity requirements and maintenance of financial resources, (iv) risk modeling and assessments, (v) default management planning, and (vi) risk relating to new initiatives. The Risk Committee also advises management regarding these aspects of OCC's operation.

The Risk Committee has oversight of OCC's Chief Risk Officer. The Risk Committee meets regularly with the Chief Risk Officer and has the authority to approve management's recommendation to appoint or replace the Chief Risk Officer. The Risk Committee, in consultation with the CEO, also reviews the performance of OCC's Enterprise Risk Management and Model Validation programs. Further, the Risk Committee determines whether or not to accept or modify the CEO's recommendations with respect to the performance assessment and annual compensation for the Chief Risk Officer.

Technology Committee

The Technology Committee assists the Board in overseeing OCC's information technology ("IT") and operational strategy, infrastructure, resources, and risks. This includes overseeing major IT and operational related strategies, projects and technology architecture decisions, monitoring whether OCC's IT programs effectively support OCC's business objectives and strategies, and monitoring OCC's IT and operational risk management efforts and the security of OCC's information systems and physical security of information system assets. The Technology Committee also advises management regarding these aspects of OCC's operation.

**Key
Consideration 4:**

The board should contain suitable members with the appropriate skills and incentives to fulfill its multiple roles. This typically requires the inclusion of non-executive board member(s).

Board Composition

As set forth in the Rules, the Board is composed of:

- Nine directors who represent OCC's Clearing Members;
- Five directors designated by and representing each of OCC's Stockholder Exchanges;
- Five Public Directors; and
- One management director.

Fitness Standards for Directors¹⁷

The Governance and Nominating Committee, the Stockholder Exchanges, and the Board are required to apply certain fitness standards when considering nominees for election to the Board, including the following criteria:

- Characteristics essential for effectiveness as a member of the Board, including, but not limited to, integrity, objectivity, sound judgment and leadership;
- Expertise and experience in an area relevant to governance of OCC, including, but not limited to: (i) strategic planning, such as new business development, expansion of markets, products and customers, and joint venture development; (ii) risk management relevant to risks such as credit, market, liquidity, operational, legal and regulatory compliance, payment systems, clearance and settlement, new products, risk modeling, risk valuation, and systemic risk management; (iii) technology, such as infrastructure, applications development and maintenance, information security, and disaster recovery; (iv) operations; (v) trading; (vi) business management; (vii) finance; (viii) audit; (ix) governmental and legislative relationship management; (x) compensation and human resources; and (xi) legal, regulatory, and compliance expertise.
- Substantial seniority in own firm;
- Knowledge of securities and/or futures industries;

¹⁷ More information on Board director fitness standards can be found on OCC's public website: <https://www.theocc.com/about/corporate-information/board-charter>.

- Appropriate educational credentials or other certifications;
- For current directors eligible for re-election, length of service on the Board and attendance, participation and contribution at Board and Committee meetings; and
- Appropriate weight given to diversity factors.

Disqualifying Characteristics

No person is qualified to serve on the Board if the person:

- Is subject to a “statutory disqualification” under Section 3(a)(39) of the Securities Exchange Act;
- May be refused registration under Section 8a(2) of the Commodity Exchange Act; or
- has a history of serious disciplinary offenses, including, but not limited to, those that would be disqualifying under CFTC Regulation § 1.63.

When selecting member directors, the Governance and Nominating Committee must also consider: balanced representation among all clearing members; balanced representation of all business activities of clearing members; the nature of the firm with which each prospective Director is associated; industry affiliations; assuring that not all Member Directors are representatives of the largest clearing member organizations based on the prior year’s volume; and, developing a mix of Member Directors that includes representatives of clearing member organizations that are primarily engaged in agency trading on behalf of retail customers or individual investors.

Public Directors

Section 6A of Article III of OCC’s By-Laws (Public Directors) define a Public Director as a person “not affiliated with any national securities exchange or national securities association or with any broker or dealer in securities.” OCC includes five Public Directors on its Board. The Audit Committee, Compensation and Performance Committee, Governance and Nominating Committee, and Risk Committee are each required to include at least one Public Director. The Audit Committee and the Compensation and Performance Committee are each required to be chaired by a Public Director. The Regulatory Committee must be comprised solely of Public Directors

Board Compensation

In order to provide the incentives needed to attract and retain Public Directors with appropriate skills, Public Directors are compensated for their services at rates determined by the Board from time to time. Member Directors and Exchange Directors receive nominal compensation for their



service. Members of the Board also may be reimbursed for their reasonable expenses in attending meetings of the Board or any Committee thereof.

Biographies of OCC's Board Members can be found on its public website.¹⁸

Key Consideration 5:

The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.

Since its inception, OCC has operated with integrity, fairness, and trust. These principles provide the foundation on which OCC's reputation rests, and key stakeholders remain confident that the organization is able to perform its critical responsibilities as both a clearing and self-regulatory organization.

Article IV of OCC's By-Laws (Officers) set forth the roles and responsibilities of OCC's Executive Chairman, Member Vice Chairman, CEO, COO, Vice Presidents, Treasurer, Secretary and Controller. The Executive Chairman, CEO and COO delegate authority for certain aspects of their responsibilities to certain senior executives. Each member of the executive team is ultimately responsible for the day-to-day operations and performance of his or her applicable business area. Management is also responsible for establishing and maintaining internal control over the clearing and settlement of transactions cleared by OCC.

When selecting members of its management, OCC requires that they possess the appropriate experience, skills, and integrity. OCC seeks out individuals with significant experience and background in relevant subject areas, such as compliance and regulatory work, risk management, accounting, finance, and other areas of experience specific to the position requirements. OCC's current management, for example, has a variety of skills and experiences, including degrees in areas of accounting, law, economics, and organizational management.

OCC's Code of Conduct describes the expectation that each person performing work for OCC will do so lawfully, honestly, and ethically. This means conducting business in accordance with applicable laws and regulations with the highest standards of personal and professional conduct. The Code of Conduct applies to all employees, contractors, and temporary personnel, as each person's actions contribute to OCC's overall success and reputation. The Code of Conduct is an expression of OCC's commitment to honesty and integrity. Disciplinary measures, up to and including termination, may be taken against anyone who directs and approves noncompliant conduct, or has knowledge of such noncompliance and does not promptly act to correct or report it.

¹⁸ <https://www.theocc.com/Company-Information/Board-of-Directors>.



OCC can remove a member of its management if necessary. The Board may remove any officer at any time with or without cause. Each of the Executive Chairman, CEO and COO, respectively, may remove any officer or agent he has appointed, at any time with or without cause.

**Key
Consideration 6:**

The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crisis and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.

OCC has established an enterprise-wide Risk Management Framework Policy ("Framework") that articulates OCC's framework for identifying, measuring, managing, and reporting both internal and external risk to OCC. The Framework is described in Principle 3.

Pursuant to the Framework, OCC follows a "three lines of defense" model, which allows OCC to manage its control infrastructure with clarity of ownership and accountability. The first line of defense consists of OCC's business units, including financial risk management, operations, technology, legal, regulatory affairs, and corporate functions such as human resources, finance, accounting, and project management. The first line is responsible and accountable for designing, owning, and managing risks by maintaining policies, procedures, processes, and controls to manage relevant risks.

The first line is supported and monitored by the second line of defense, which consists of enterprise risk management, compliance, security services and model validation functions. The second line is an oversight function and is responsible for designing, implementing, and maintaining an enterprise-wide risk management and compliance program and tools to assess and manage risk at the enterprise level. The second line also works with the first line to assess risks and establish policies and guidelines, and advise, monitor, and report on the first line's effectiveness in managing risk and maintaining and operating a resilient control infrastructure. The second line provides reports to OCC's Management Committee and Board (or committee thereof) on the first line of defense's effectiveness in managing risk and compliance and provides an assessment of whether OCC's services are being delivered within OCC's risk appetite.

The third line of defense consists of OCC's internal audit function. The third line reports to the Audit Committee of the Board and is accountable for designing, implementing and maintaining a comprehensive audit program that allows OCC's management and Board to receive independent and

objective assurance that the quality of OCC's risk management and internal control infrastructure is consistent with OCC's risk appetite and Risk Tolerances. The internal audit function also maintains a diverse and skilled team of professionals with a variety of business, technology, and audit skills, and performs all of its activities in compliance with the Institute of Internal Auditors' standards found in the International Professional Practices Framework.

Enterprise Risk Management Governance

OCC's risk governance framework follows a hierarchical structure that begins with the Board, which has ultimate oversight responsibility for OCC's risk management activities. The Board performs an oversight role to ensure that OCC is managed and operated in a manner consistent with OCC's regulatory responsibilities as a SIFMU providing clearance and settlement services. The Board also is responsible for ensuring that OCC has governance arrangements that, among other things, prioritize the safety and efficiency of OCC through the Framework. The Board is responsible for overseeing OCC's risk management policies, procedures and systems designed to identify, measure, monitor and manage risks consistent within the Risk Appetite Statements and Risk Tolerances approved by the Board. The Board is also responsible for overseeing and approving OCC's recovery and orderly wind-down plan. To carry out these responsibilities, the Board's committees assist it in the manner described under Key Consideration 3 above.

OCC's Management Committee is responsible for annually reviewing and approving the Framework - and the Risk Appetite Statements and Risk Tolerances established thereunder – and recommending further approval thereof to the Board. The Management Committee also reviews reports related to metrics for assessing Risk Tolerances to determine whether OCC's Key Risks¹⁹ are behaving within established tolerances and take or recommend action as needed to return Key Risks to their appropriate levels and escalate exceptions to Risk Tolerances and Risk Appetite Statements to relevant Board committees. The Management Committee is permitted to establish working groups to assist it in the management of Key Risks.

Emergency Authority

In an emergency situation it may be necessary for members of OCC's management to take rapid action to ensure that OCC can continue to operate safely and efficiently. OCC's Rules provide clear authority for members of OCC's management to make decisions in case of an emergency and establish a decision-making hierarchy. Article III, Section 15 of the By-Laws (Emergency Powers) provides that in the event of an

¹⁹ OCC's Key Risks are described in further detail under Principle 3 below.



emergency such as a terrorist attack, war or communications systems failure in which the Board or a standing committee of the Board cannot be convened, the Executive Chairman, CEO or COO can declare the existence of an emergency. If the Executive Chairman, CEO or COO are not able to take this action, Article IV, Section 7 of the By-Laws (Vice Chairmen of the Board) provides that the authority is transferred to certain officers of OCC identified in the By-Laws. Article III, Section 15 of the By-Laws (Emergency Powers) provides that the relevant officer can call special meetings of the Board at any time.

Under Article III, Section 15 of the By-Laws (Emergency Powers), the Board may approve a rule change during an emergency by vote of a majority of Directors present at a meeting even if the change would otherwise require approval of a greater number of Directors.

Pursuant to Article III, Section 15 (Emergency Powers), OCC maintains a Board-approved list of officers, in order of priority, that may be considered Board members to the extent necessary to establish a quorum, and similar list of officers that may take action that the Executive Chairman, CEO or COO is authorized, but unable, to take.

In an emergency situation it may be necessary to suspend or waive certain provisions of the Rules in the interests of financial stability or to ensure that OCC may continue to operate safely and efficiently. Article IX, Section 14 of OCC's By-Laws (Suspension of Rules in Emergency Circumstances) allows the Board, Executive Chairman, CEO or COO to waive or suspend any provision of OCC's Rules, policies, or procedures if it or he determines that an emergency exists and the waiver or suspension is necessary or advisable to protect OCC or the public interest in order for OCC to continue to clear transactions. Article IX, Section 14 (Suspension of Rules in Emergency Circumstances) requires that OCC notify the SEC or CFTC within two hours of any such emergency waiver or suspension and that the waiver or suspension may continue for no more than 30 days unless OCC has submitted a rule change seeking to continue the effectiveness of the waiver or suspension. The SEC and CFTC have the ability to immediately discontinue any such waiver or suspension upon written notice of objection transmitted to OCC.

Key Consideration 7:

The board should ensure that FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.

As noted above under Key Consideration 4, OCC's Board composition includes nine Member Directors representing OCC clearing members, and Member Directors are represented on each Board committee. Member Directors are nominated by the Governance and Nominating Committee with the goal of ensuring diverse and balanced representation from the

membership. OCC also includes Public Directors on its Board and the Audit Committee, Compensation and Performance Committee, Governance and Nominating Committee, Regulatory Committee, and Risk Committee to provide for meaningful representation of the public interest. The Audit Committee and the Compensation and Performance Committee are each required to be chaired by a Public Director. The Regulatory Committee must be comprised solely of Public Directors.

OCC and its committees and officers are also involved in multiple industry forums, including the Financial Services-Information Sharing and Analysis Center, the Financial Services Sector Council, the Futures Industry Association, the International Options Markets Association, the International Swaps and Derivatives Association, the National Association of Corporate Directors, the Options Industry Council Roundtable, the Securities Industry and Financial Markets Association, Securities Traders Association, and the World Federation of Exchanges. OCC's participation in these groups helps provide it with feedback from all sectors of the marketplace, including indirect participants who benefit from OCC's services, to verify that OCC's policies and strategies are in line with the overall interests of the market.

OCC directly solicits feedback from its clearing members through its Member Services function dedicated to providing OCC's clearing members with premier customer service, and through its formation and active participation in OCC's Clearing Member Roundtable, which provides clearing members with an opportunity to discuss with OCC operational effectiveness and efficiency and larger industry issues. OCC also maintains a clearing member representative program, under which each clearing member has a designated OCC contract for any issues, training needs or questions. The Customer Relationship Management Program and Clearing Member Roundtable are discussed in greater detail under Principle 21, below.

OCC uses a number of resources in order to disseminate accurate and transparent information regarding its operations to clearing members, market participants and the general public:

- OCC's public website,²⁰ which contains information regarding OCC's governance and operations, OCC's Rules, and changes to the Rules, as well as educational information regarding trading options and futures, market data, risk management tools and OCC clearing membership requirements;
- OCC's private secured proprietary website for clearing members, participant exchanges, approved retail brokers and trading desk personnel, which provides users with a secure, customized, single point

²⁰ <https://www.theocc.com>.

of access to authorized Web-enabled information, data, resources, and applications;

- An educational website,²¹ which provides general information to the public about options trading and the options industry, on behalf of the Options Industry Council;
- Alerts on various topics, including daily volume, contract adjustments, market data updates, expiration notices, new listings, press releases, OCC updates, and other important notices, broadcast to public email distribution lists;
- A social media presence, which provides general information to the public;
- Press releases, announcing significant updates in OCC's business;
- A periodic newsletter to clearing members, which may discuss various topics, including upcoming system enhancements, new product introductions and clearing updates;
- Information memoranda providing targeted information to clearing members;
- An operations-related monthly conference call, which is open to all clearing members and staff;
- OCC's Annual Reports, which are published on OCC's public website; and
- Postings on OCC's website announcing significant updates in OCC's business.

²¹ <https://www.optionseducation.org>.

**Principle 3: FRAMEWORK FOR THE COMPREHENSIVE MANAGEMENT OF RISK;
SEC Rule 17Ad-22(e)(3)**

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

SEC Rule 17Ad-22(e)(3) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to maintain a sound risk management framework for comprehensively managing legal, credit, liquidity, operational, general business, investment, custody, and other risks that arise in or are borne by the covered clearing agency.

**Key
Consideration 1**

An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.

As discussed above in Key Consideration 5 of Principle 2, OCC maintains an enterprise-level Risk Management Framework Policy, which articulates OCC’s framework for identifying, measuring, monitoring, and managing the range of risks that arise in, or are borne by, OCC. OCC is a SIFMU that serves a critical role in financial markets as the sole CCP that provides clearance and settlement services for U.S. listed options and guarantees the obligations associated with the contracts that it clears. As a SIFMU, OCC recognizes its role in promoting financial stability for market participants, investors, and the economy and that it must therefore maintain a sound risk management framework for comprehensively managing the risks presented to it.

Risk Management Philosophy

As a SIFMU, OCC must be mindful of the public interest and its obligation to promote financial stability, reduce the potential for systemic contagion, and support the smooth functioning of the U.S. financial markets.

Furthermore, OCC concentrates financial risks for the markets it serves by acting as the CCP for all of the transactions that it clears. As a result of this concentration, OCC’s primary objective is to ensure that it properly manages the financial risks associated with functioning as a CCP, which primarily relate to potential clearing member default scenarios.

As a CCP, OCC’s daily operations, among other things, involve managing financial, operational, and business risks. In managing these risks, OCC’s daily operations – which are guided by policies, procedures, and controls – are designed to ensure that financial exposures and service disruptions are within acceptable limits set by OCC as part of its Risk Appetite Framework (“RAF”) as described below.

Risk Appetite Framework

The RAF's purpose is to establish OCC's overall approach to managing risks at the enterprise level in an effective and integrated fashion. The RAF establishes the level and types of Key Risks, described in further detail below, that OCC is willing and able to assume in accordance with OCC's mission as a SIFMU. Under the RAF, Risk Appetite Statements are used to express OCC's judgment, for each of OCC's Key Risks, regarding the level of risk that OCC is willing to accept related to the provision of CCP services. These statements are qualitative indications of appetite that set the tone for OCC's approach to risk-taking and are indicative of the level of resources or effort OCC puts forth to prevent or mitigate the impact of a Key Risk.

Risk Appetite Statements are set annually by each department associated with a key risk in cooperation with OCC's Enterprise Risk Management department.

In addition to Risk Appetite Statements, OCC assigns risk tolerances to the Key Risks as approved by the Board. Risk Tolerances represent the application of OCC's risk appetite to specific sub-categories or aspects of Key Risks. The purpose of the proposed risk tolerances is to ensure that OCC sets acceptable levels of risk within those specified sub-categories of Key Risks.

Key Risk Identification

OCC identifies the risks that would impede its ability to perform services as expected, and the process for identifying such risks takes a broad view to include (i) direct financial and operational risks that may prevent the smooth functioning of CCP services, (ii) reputational risks that could undermine the perception of OCC as a sound pillar in the financial market, and (iii) the risks OCC faces from third parties, such as custodians and settlement banks, that are critical to the design and operation of OCC's infrastructure and risk management. Identifying Key Risks in this manner facilitates OCC's ability to comprehensively manage the legal, credit, liquidity, operational, general business, investment, custody, and other risks that arise in or are borne by it. OCC's Key Risks are (i) financial (which includes credit, liquidity, investment and model risk), (ii) process-related operations, (iii) IT-related operations, (iv) general business (which includes risks related to its business strategy, reputation, ability to replenish capital if needed and governance), and (v) legal.

Risk Management Oversight

As described above under Principle 2, OCC's internal structures for risk management follow programs generally accepted in the financial services industry, including the "three lines of defense" model (i.e., front-line employees, enterprise risk/compliance functions, and internal audit) and a program for internal controls that includes risk assessment and risk reporting.

<p>Key Consideration 2</p>	<p>An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.</p> <p>OCC incentivizes its clearing members to manage and contain the risks they pose to OCC through certain Rules. OCC Rule 311 (Clearing Member Risk Management) requires all clearing members to maintain “current written risk management policies and procedures that address the risks [it] may pose to” OCC and to make available to OCC “information and documentation . . . regarding [its] risk management policies, procedures, and practices, including, but not limited to, information and documents relating to the liquidity of its financial resources and its settlement procedures.” In addition, OCC’s Rules set forth clearing member qualifications that include initial and ongoing minimum financial resource and net capital requirements,²² as well as requirements that clearing members provide early warning notice to OCC upon the occurrence of certain reportable events related to the clearing member’s financial wellbeing.²³ Failure to comply with any OCC Rule may result in fines or in a clearing member’s censure, suspension or expulsion, or the imposition of limitations on the clearing member’s activities, functions, or operations.²⁴</p>
<p>Key Consideration 3:</p>	<p>An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.</p> <p>OCC maintains a comprehensive third-party risk management program, which includes requirements for onboarding and ongoing monitoring of third parties on which OCC relies (such as vendors, settlement banks, and FMUs with linkages to OCC).</p>
<p>Key Consideration 4:</p>	<p>An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.</p> <p>OCC maintains a recovery and wind-down plan that identifies (i) its critical operations and services, (ii) scenarios that present a threat to OCC continuing to provide its critical operations and services as a going concern, and (iii) plans for its recovery or orderly wind-down in the event such a scenario is realized.</p>

²² See OCC Rules 301 (Initial Requirements) and 302 (Minimum Net Capital).

²³ See OCC Rule 303 (Early Warning Notice).

²⁴ See Chapter XII of OCC’s Rules (Disciplinary Proceedings).

**Principle 4: CREDIT RISK;
SEC Rule 17Ad-22(e)(4)**

An FMI should effectively measure, monitor, and manage its credit exposure to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two largest participants and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources sufficient to cover the default of the one participant and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.

SEC Rule 17Ad-22(e)(4) requires a covered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to effectively identify, measure, monitor, and manage its credit exposures to participants and those exposures arising from its payment, clearing, and settlement processes.

**Key
Consideration 1**

An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

As a SIFMU, OCC must carefully manage credit risk from clearing members, banks, and certain other parties. OCC maintains robust processes to identify and mitigate this credit risk, including procedures intended to ensure that it transacts only with financially strong counterparties. OCC also maintains robust surveillance processes intended to identify counterparty credit concerns and to allow it to take appropriate action in response. These surveillance processes also allow OCC to capture its aggregate credit exposure across counterparties, or related entities, and allow it to mitigate these risks in a manner that ensures the integrity of financial markets.

OCC has a low appetite for credit risk and maintains financial resources sufficient to cover its credit exposure to clearing members and banks under normal and stressed conditions. Specifically, OCC manages credit risk by maintaining margin and Clearing Fund resources that are sufficient to cover OCC's credit exposure to clearing members and to cover a wide range of stress scenarios that includes the default of OCC's two largest participants and their affiliates under extreme but plausible market conditions. OCC also manages credit risk by enforcing membership standards and monitoring the creditworthiness and operational reliability of its clearing members and banks on an initial and ongoing basis.



OCC has established a Third-Party Risk Management Framework that explains OCC’s approach to third parties, including those that may present credit risk. The Third-Party Risk Management Framework identifies the process by which OCC identifies and mitigates credit risk, ensuring that OCC transacts with counterparties that demonstrate strong financial health and a low probability of default. The Third-Party Risk Management Framework also describes surveillance processes intended to identify deterioration in a third party’s credit and to trigger certain protective actions when deterioration is detected. Finally, the Third-Party Risk Management Framework explains that OCC considers credit exposure across affiliated relationships for third parties and related entities that have multiple relationships with OCC.

For the protection of OCC against a clearing member default, OCC manages risk through financial safeguards that include rigorous admission standards, member surveillance activities, collection of high-quality margin collateral and a mutualized Clearing Fund. This system allows OCC to provide stability during times of unexpected events in the derivatives markets. OCC uses its margin methodologies to measure clearing member portfolio risk and to value and collateralize positions, which reduces credit risk and provides protections to clearing members and to OCC against any possible defaults.

**Key
Consideration 2**

An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

OCC is exposed to credit risk given its role as guarantor of the contracts it clears. While OCC is primarily exposed to the failure of a clearing member, it also has exposure to failures by banks (e.g., settlement, letter of credit, custodial, escrow, and committed credit facility participants) and various linked FMUs.

OCC has identified several sources of credit risk, including, but not limited to, the following:

- (1) The failure of a clearing member to pay for purchased options, meet expiration-related settlement obligations, make any required daily mark-to-market payments, or meet margin obligations;
- (2) Costs associated with liquidating a clearing member’s positions in the event of suspension;
- (3) Inability of OCC to access cash or collateral held in the custody of a custodial bank;
- (4) A credit facility’s failure to fund a draw requested by OCC;
- (5) A letter of credit issuer’s failure to fund a demand for payment;
- (6) A committed credit facility participant ceases to function as a going

concern or fails to honor a borrowing request; and

(7) The failure of a linked FMU.

Establishing and Assessing Counterparty Creditworthiness

OCC's primary tool for identifying credit risk is screening the creditworthiness of potential counterparties. To facilitate this, OCC maintains onboarding procedures that require that all clearing members, banks and linked FMUs meet certain minimum financial and operational standards before OCC will agree to do business with them. For clearing members, these minimum participation standards are set forth in OCC's Rules. Standards relate to maintaining appropriate registrations, capital in excess of regulatory minimums and commensurate with activity anticipated to be transacted, and sufficient staffing with appropriate levels of experience. Moreover, based on risks identified during the onboarding process, OCC may place limits or contingencies on the relationship. For example, before a new clearing member or an existing clearing members request of an expansion of its membership is approved, OCC's Risk Committee may first recommend to the Board, or the Board may require, that additional financial requirements, such as increased capital or margin requirements be imposed, as well as restrictions on clearing activities.

OCC also engages in ongoing monitoring of the creditworthiness of its counterparties by reviewing the financial reports for clearing members, banks, and linked FMU relationships in order to identify any deterioration in a counterparty's financial condition. Parameters considered include deterioration in capital, profitability, and maturing subordinated debt agreements. OCC reviews independent auditors' reports and internal control reports provided within the counterparty's annual reports. OCC also monitors relevant market data including, but not limited to, publicly traded stock prices, credit default swap prices, and/or relevant market news to identify potential issues that may affect a counterparty. OCC also reviews clearing members' risk management policies, procedures, and processes as described under Key Consideration 2 of Principle 3. Finally, OCC monitors the operational performance of each counterparty on a daily basis to detect any signs of deterioration in its operational capabilities.

With this information, OCC applies "watch level" parameters, whereby the detection of certain facts and circumstances suggesting the counterparty's deteriorating financial condition triggers enhanced surveillance requirements and/or business restrictions that OCC may impose pursuant to OCC Rule 305 (Restrictions on Certain Transactions, Positions and Activities). For example, a clearing member whose net capital has dropped below a certain threshold or who has demonstrated an operational insufficiency will be placed on an elevated watch level and may become subject to a special margin call pursuant to OCC Rule 609 (Intra-Day Margin) or even suspended pursuant to OCC Rule 1102 (Suspension).



OCC also conducts daily stress tests of individual clearing member’s risk exposure, with additional margin requirements automatically triggered if the clearing member’s perceived credit risk exceeds predetermined thresholds. OCC has developed separate watch level parameters for clearing members and banks, accounting for differences in their regulatory reporting and overall business operations. These watch level parameters have been approved by the Risk Committee and are reviewed annually to assess the effectiveness and adequacy of the parameters. This annual assessment includes a review of the various components of OCC’s watch level frameworks and how they performed over the previous year, as well as a review of any observed counterparty-specific issues or trends. Other components of this assessment include regulatory changes that may affect OCC watch level frameworks or parameters. These reviews are also intended to identify gaps where additional watch level frameworks could serve to enhance existing policies or eliminate certain policies that have become stale.

OCC also monitors for changes in the intra-day credit exposure of its clearing members to ensure that it is able to identify emerging risks and take protective measures when deemed necessary, including the calling of an intra-day margin call. Additionally, OCC monitors the credit exposure created by daily trade premium activity and clearing members’ establishment of new positions.

Moreover, OCC monitors the concentration of its credit risk by taking a holistic view of its credit risk across all counterparties – clearing members, banks, and FMUs – and aggregating the risks presented by related entities. OCC aggregates the multiple credit and/or operational risks that may be presented by the same entity; e.g., a clearing member that has an affiliate that is also a custodial bank for OCC, or a clearing member that is also designated to be one of OCC’s liquidation agents under a default scenario. OCC reviews these reports on the concentration of credit risk monthly at both Financial Risk Management department meetings and Credit and Liquidity Risk Working Group meetings.

Key Consideration 3:	A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.
	Key Consideration 3 is not applicable to OCC, because OCC is not a payment system or SSS.

**Key
Consideration 4:**

A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.

OCC utilizes a number of financial resources to cover its credit exposure, including the collection of margin from clearing members in respect of their outstanding positions, which is discussed in greater detail under Principle 6, and a requirement that clearing members make contributions to the Clearing Fund. The Clearing Fund is a critical financial resource that is in place to help cover clearing member defaults and certain other potential losses, as specified in Chapter X of OCC's Rules (Clearing Fund Contributions). In the event that a defaulting clearing member's margin deposits are insufficient to close out its positions, OCC may use the Clearing Fund to satisfy any remaining obligations, as the non-defaulting clearing members' margin cannot be used to pay for losses attributable to the defaulting clearing member. OCC would first use the Clearing Fund deposits of the suspended clearing member. Should those assets still be insufficient to close out the suspended clearing member's positions, OCC would use the Clearing Fund deposits of the non-suspended clearing members. This "waterfall" is described in more detail in Principle 4, Key Consideration 7 below. The Clearing Fund can also be used to meet the obligations resulting from the default of any bank or FMU. OCC also maintains access to additional financial resources, including the ability to call for Clearing Fund assessments, as described below under Key Consideration 7.

Clearing Fund Composition

OCC currently permits clearing members to deposit any of the following assets to satisfy their Clearing Fund obligations:

- Cash (USD only);
- U.S. Government securities; and

- Canadian Government securities.

Because one function of the Clearing Fund is to provide OCC with a pool of liquid securities that can be used to collateralize a draw on its committed liquidity facilities, the list of securities eligible for pledging as Clearing Fund deposits are also securities that OCC's committed liquidity facilities permit to be pledged. OCC also monitors collateral types that are accepted for Clearing Fund purposes to make sure determinations are consistent with OCC's risk appetite.

Clearing Members also are required collectively to contribute a minimum amount of cash to the Clearing Fund ("Clearing Fund Cash Requirement"), which is periodically adjusted by OCC and shall at all times be no less than

\$3 billion. Each Clearing Member's proportionate share of the Clearing Fund Cash Requirement is equal in percentage to its proportionate share of the Clearing Fund as determined by OCC's Clearing Fund allocation methodology. OCC has the authority to temporarily increase the amount of cash required to be maintained in the Clearing Fund, up to an amount that includes the size of the Clearing Fund as determined in accordance with Rule 1001 (Size of Clearing Fund), to respond to changing business or market conditions for the protection of OCC, Clearing Members or the general public in accordance with OCC's policies and procedures. Any such increase generally must be satisfied no later than the second business day following the date of notification.

OCC applies a haircut to Clearing Fund securities, in a manner consistent with levels prescriptively described within OCC Rule 1002 (Clearing Fund Contributions).

Clearing Fund Size

OCC sets the size of the Clearing Fund to provide a high degree of assurance that market integrity can be maintained in the event that OCC's two largest clearing member groups (i.e., clearing members and their affiliate clearing members), fail to meet their obligations to OCC. OCC believes this approach, designed to meet a "Cover Two" standard, is intended to both satisfy OCC's regulatory requirements and be consistent with international standards and best practices for central counterparties.

OCC determines the size of its Clearing Fund based on the results of stress tests conducted daily using standard predetermined parameters and assumptions. These daily stress tests consider a range of relevant stress scenarios and possible price changes in liquidation periods, including but not limited to: (i) relevant peak historic price volatilities; (ii) shifts in other market factors including, as appropriate, price determinants and yield curves; and (iii) the default of one or multiple clearing members. OCC uses a set of sizing stress tests to project the Clearing Fund size necessary for OCC to maintain sufficient pre-funded financial resources to cover losses arising from the default of the two clearing member groups that would potentially cause the largest aggregate credit exposure to OCC



in extreme but plausible market conditions. OCC's sizing stress tests include (i) a 1-in-80 year hypothetical systemic market event, which OCC believes would provide sufficient coverage of OCC's Board-approved risk tolerance and to guard against intra-month scenario volatility and procyclicality; and (ii) hypothetical idiosyncratic scenarios designed to capture the risks of extreme moves in individual or small subsets of securities.

OCC does not include Clearing Fund replenishment or assessment rights or any recoveries the Clearing Fund might make from assets of defaulted clearing member(s) not held at OCC when determining the amount of such pre-funded financial resources. The Clearing Fund's size is set on the first business day of each month, subject to intra-month resizing as described below under Key Consideration 5. OCC performs a monthly review of the Clearing Fund model parameters, as required by SEC Rule 17Ad-22, and OCC's Model Validation Group, which: (i) reports to and is supervised by the Chief Risk Officer and which must present Model Risk Management Policy to the Risk Committee and Board for review and approval; (ii) reviews daily backtesting results; and (iii) conducts an annual review of the model to determine whether it is working as intended and if the existing validation activities are sufficient. OCC's Chief Financial Risk Officer is responsible for ensuring that the Clearing Fund is set at a size to cover OCC's Board-approved risk tolerance for pre-funded financial resources.

Key Consideration 5:

A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP's participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.

As described in Key Consideration 4 above, OCC uses a set of sizing stress tests to project the Clearing Fund size necessary for OCC to maintain sufficient pre-funded financial resources to cover losses arising from the default of the two clearing member groups that would potentially cause the largest aggregate credit exposure to OCC in extreme but

plausible market conditions. OCC also runs daily stress tests designed to measure the exposure of the Clearing Fund to the portfolios of individual clearing member groups to determine whether any such exposure is sufficiently large as to necessitate OCC calling for additional resources so that OCC continues to maintain sufficient financial resources to guard against potential losses under a wide range of historical stress scenarios (“sufficiency stress tests”). OCC has established policies and procedures that monitor and analyze daily these sufficiency stress test exposures, in order to identify circumstances when it is necessary to collect additional collateral from the clearing member group(s) driving the peak exposures, or when it should consider an intra-month resizing of the Clearing Fund to ensure OCC maintains sufficient financial resources. Upon an intra-month resizing, clearing members are given two business days to fund any Clearing Fund deficits.

Additionally, each month OCC reevaluates the appropriateness its stress testing models, scenarios, parameters, and assumptions to ensure their continued relevance given current market and business conditions and to recommend changes when necessary. Stress test assumptions in the Clearing Fund methodology include: (i) a marked rise in volatility, (ii) worst-case timing of default, and (iii) removal of any excess collateral. In these stress test assumptions, OCC does not assume it will be able to recover from defaulting firms or utilize its Clearing Fund replenishment and assessment rights. The results of these assessments are summarized and presented to the Stress Test Working Group. All new or modified stress tests are also reviewed by Stress Test Working Group. Any recommended changes to the stress testing and Clearing Fund methodology also require Management Committee review prior to being presented to the Risk Committee and the Board.

Annually, OCC also assesses the adequacy of the Clearing Fund relative to its stated purposes, with any recommended changes to the Clearing Fund sizing or allocation formulas subject to approval by the Risk Committee and the Board.

Additionally, OCC maintains a comprehensive stress and scenario testing system. In order to ensure that OCC maintains enough financial resources to meet the above described standards in extreme but plausible market conditions, OCC conducts and reviews historical and hypothetical stress tests to cover a wide range of potential stress scenarios. The comprehensive stress testing system is designed to be dynamic: OCC can add historical scenarios with different attributes, add hypothetical scenarios and align scenarios with various aspects of OCC’s business, as appropriate. Currently, the comprehensive stress testing system is also designed to provide OCC with the ability to examine under what scenarios and methodologies potential weaknesses may emerge within or beyond OCC’s financial resources frameworks.



	<p>As noted above under Key Consideration 4, model parameters used in sizing OCC's Clearing Fund are reviewed monthly and are subject to OCC's Model Risk Management Policy and the Model Validation Group's periodic model validation process.</p>
Key Consideration 6:	<p>In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.</p> <p>OCC has designed its stress testing system with these guidelines in mind, and conducts reviews of both historical and hypothetical stress tests to cover a wide range of market scenarios, as well as reverse stress testing scenarios that include but are not limited to extreme but plausible market moves and multiple defaults.</p> <p>As discussed under Key Consideration 5 above, each month OCC assesses potential recommendations for stress tests to apply to the Clearing Fund methodology. Stress test assumptions that are assessed include: a marked rise in volatility; worst-case timing of default; removal of any excess collateral; collateral subject to traditional haircuts realized at no premium to haircut levels; and no reliance on recoveries from defaulted firms or on Clearing Fund replenishment rights.</p>
Key Consideration 7:	<p>An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.</p> <p>OCC's Rules²⁵ directly address how OCC mitigates any potential credit losses resulting from the default of one or more clearing members, banks, or other clearing organizations. The Rules are aimed at minimizing losses to OCC and minimizing systemic risk to other members and key market participants. The policies and procedures governing the default of a</p>

²⁵ See Chapter X of the Rules, Rule 707 (Close-Out of OCC X-M Accounts) and Rule 1104 (Creation of Liquidating Settlement Account).

clearing member and the closeout of such a defaulting member's open positions are described in greater detail under Principle 13.

In order to meet settlement obligations that result from a clearing member's default and resulting suspension, OCC's Rules provide for the usage of the following resources in the following order:

- (1) *Margin deposits of the suspended firm*: This includes cash, deposits converted to cash and borrowings using such deposits to obtain funds. This specifically excludes deposits in lieu of margin (i.e., specific or escrow deposits).²⁶
- (2) *Clearing Fund deposits of the suspended firm*: OCC may utilize any cash, convert the Clearing Fund deposits of the suspended clearing member to cash, or effect borrowing or other transactions using such deposits in order to obtain funds.
- (3) *~~Current and Retained Earnings-Skin-in-the-Game~~*: Prior to charging a loss or deficiency proportionately to the Clearing Fund computed contributions of non-defaulting Clearing Members, OCC ~~will shall~~ contribute ~~current and retained earnings greater than 110% of the target capital level established by the Board~~ (i) a minimum level of OCC's own funds maintained exclusively to cover credit losses or liquidity shortfalls, subject to a 270-day replenishment period after each chargeable loss ("Minimum Corporate Contribution") and (ii) OCC's liquid net assets funded by equity greater than 110% of target capital ("Early Warning").
- (4) *Clearing Fund deposits of non-defaulting firms and EDCP Unvested Balance*: OCC may utilize any cash, convert Clearing Fund deposits of non-defaulting firms to cash, or effect borrowing or other transactions using such deposits in order to obtain funds. If OCC charges the Clearing Fund contributions of non-defaulting members, OCC shall charge on a proportionate basis the funds held under OCC's Executive Deferred Compensation Program Trust which are deposited on and after January 1, 2020 and in excess of amounts necessary to pay for the benefits accrued and vested as of the date charged ("EDCP Unvested Balance").

In order to meet settlement obligations that result from a bank's or clearing organization's failure to perform, OCC's Rules provide that OCC may use any cash, convert Clearing Fund deposits of non-defaulting members, or effect borrowing or other transactions using such deposits in order to obtain funds. In lieu of charging a loss or deficiency proportionately to the Clearing Fund computed contributions of non-defaulting members, OCC may elect to charge such loss or deficiency in whole or in part to OCC's ~~current earnings or retained earnings~~ liquid net assets funded by equity

²⁶ Under OCC's Rules, if a clearing member has made a specific or escrow deposit with respect to a short position, for example, that short position is considered to be "covered" and is not included in calculating the clearing member's margin requirements, and such deposits in lieu of margin are kept separate from margin deposits during a clearing member default.



above the Early Warning.

in extreme loss scenarios, in order to meet settlement obligations that result from the default and resulting suspension of one or more clearing member(s):

- (5) *Clearing Fund assessments*: In the unlikely event that Clearing Fund deposits prove to be inadequate to cover OCC's losses, each clearing member may be assessed for additional amounts. If an amount is paid out of the Clearing Fund as a result of a proportionate charge to satisfy settlement obligations that result from a clearing member's default and resulting suspension, then starting on the date of such proportionate charge there automatically commences a cooling-off period during which a clearing member will not be liable to make good more than an additional 200% of the amount of its then required contribution.
- (6) *Voluntary contributions*: If OCC has determined that it is likely to have insufficient financial resources remaining to satisfy its obligations and liabilities resulting from a default, OCC has the ability to call for voluntary contributions to the Clearing Fund from its non-defaulting clearing members.
- (7) *Voluntary and mandatory tear-ups*. At any time following the default of a clearing member and one or more auctions, if OCC has determined that it is likely to have insufficient resources to satisfy its obligations and liabilities as a result of such default, OCC may provide an opportunity for clearing members to participate in a voluntary tear-up and, if necessary, OCC may conduct mandatory tear-ups.

To provide additional liquidity in the event of a clearing member default, OCC also maintains a committed line of credit with various banks that may be used in certain situations as well as committed repurchase facilities.

**Principle 5: COLLATERAL;
SEC Rule 17Ad-22(e)(5)**

An FMI that requires collateral to manage its or its participants’ credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

SEC Rule 17Ad-22(e)(5) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to limit the assets it accepts as collateral to those with low credit, liquidity, and market risks, and also require policies that set and enforce appropriately conservative haircuts and concentration limits if the covered clearing agency requires collateral to manage its own or its participants’ credit exposures.

**Key
Consideration 1**

An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

OCC employs a Collateral Risk Management Policy to govern the types of assets that OCC will accept as collateral, collateral valuation and how collateral eligibility is determined and changed. In addition, the policy describes the risks associated with collateral and the key components of the collateral management process.

OCC holds three basic pools of collateral – margin, deposits in lieu of margin and Clearing Fund deposits – each of which collateralizes a different set of obligations and has different standards for acceptable collateral that are related to the nature of the obligations that the collateral is intended to secure. OCC requires its clearing members to deposit collateral as margin to support obligations on short options, futures contracts and other obligations arising within the clearing members’ accounts at OCC. OCC also requires clearing members to deposit collateral serving as Clearing Fund assets to protect OCC should the margin of a defaulting clearing member be insufficient to guarantee the defaulting clearing member’s clients’ positions. The Clearing Fund provides OCC with a liquid pool of collateral that it can use to collateralize borrowings from committed liquidity facilities to its cover liquidity needs. Clearing members are required at all times to maintain sufficient collateral balances to satisfy requirements calculated by STANS. These requirements are determined daily for margin and monthly or, in certain circumstances, intra-month, for the Clearing Fund.

Acceptable Collateral

To ensure these deposits serve the purposes intended, OCC limits the types of acceptable assets to those with low credit, market and liquidity risks, by imposing a set of criteria used to ensure it only holds quality assets as margin and/or Clearing Fund deposits.

Margin and Initial Margin

Acceptable forms of margin collateral include: (1) U.S. dollars; (2) U.S. Government securities; (3) Canadian Government securities; (4) letters of credit; (5) U.S. Government-sponsored debt; (6) money market mutual funds; (7) common stocks, ETFs and ETNs; and (8) deposits in lieu of margin.²⁷ These forms of collateral are accepted as margin for options positions, stock loan positions and all other cleared contracts other than variation payments on futures contracts and stock loan positions. The amount of margin required on open positions is calculated daily on an account-by-account basis. Any shortfall in the margin on deposit for any account is eliminated by withdrawing cash from the clearing member's designated bank account.

Variation Payments on Futures Contracts and Stock Loan Mark-to-Market

Variation payments, as they relate to futures and stock loan positions, are calculated on a daily basis to collateralize the change in market value.

Variation payments pass through the daily losses and gains from the "winning side" of the contract to the "losing side" each day based on marking prices.

During times of distress and high volatility, intra-day margining may be required. Variation margin can be satisfied by U.S. dollars only.

Deposits in Lieu of Margin

Through an approved custodian, a clearing member may also post deposits in lieu of margin, as a means of facilitating "covered" option writing by permitting the clearing member or its customer to deposit the underlying asset or, in the case of a put, the exercise price, as collateral in lieu of the margin that would otherwise be required. In the case of certain index call options, the clearing member or approved custodian may deposit cash, common stock, or U.S. Government securities equal in value to the notional value of the underlying index. As a result, these positions are fully collateralized and are not included in the calculation of margin.

Clearing Fund Deposits

Acceptable Clearing Fund collateral is limited to the most liquid forms of collateral to ensure that OCC maintains adequate sources of liquidity in the event of a clearing member default. Acceptable forms of Clearing Fund

²⁷ I.e., specific deposits and escrow deposits pursuant to OCC Rules 610A, 610B and 610C.

deposits consist solely of: (1) U.S. dollars; (2) U.S. Government securities; and (3) Canadian Government securities.

Risk Considerations When Determining Acceptability

OCC determines the acceptability of different forms of collateral after a thorough risk analysis. Before an asset class is accepted as a margin and/or Clearing Fund collateral type, OCC assesses the eligibility of the collateral for such purposes as well as whether the collateral should be valued through a modeled approach within STANS or be applied a haircut.

In order to assess which asset classes would be considered as acceptable forms of margin and/or Clearing Fund collateral, OCC considers each asset class's overall market, credit, and liquidity risk. In addition, OCC applies additional asset class-specific criteria, intended to ensure individual securities are of high quality and are assets with low credit, liquidity, and market risk.

For example, OCC assesses the acceptability of equity securities as collateral and, as described below under Key Consideration 2, employs a "Collateral in Margins" approach that incentivizes clearing members to pledge equity security collateral that serves as a hedge to the clearing

member's position in cleared contracts. If such an equity security does not underlie an existing option contract, OCC requires it to have a market value of at least \$3 per share for it to be accepted as a valued security for collateral. OCC may also determine not to accept a security that meets these requirements at its discretion, based on other factors, including trading volume, the number of shareholders, the number of outstanding shares, and the current bid/ask spreads.

In assessing acceptability, OCC's risk considerations include, but are not limited to, the following:

- ***Market Risk Considerations:*** OCC considers factors such as the collateral's trading volume, number of shareholders, number of shares outstanding, intra-day and end-of-day pricing, price volatility, offsetting potential with other cleared contracts, modeling costs and projected inventories. For any security to be considered for a modeling approach and inclusion within STANS, intra-day pricing must be available in order to evaluate deposits during the trading day;
- ***Sovereign Credit Risk:*** OCC considers the risk associated with investing in or accepting as collateral a foreign country's debt, the risk of capital being locked up or frozen by a government action, and exchange-rate risk. Exchange rate risk is managed through the application of a haircut. OCC also considers the operational aspect of maintaining custody of the collateral, and the manner in which OCC can perfect a security interest in the collateral considering the relevant bankruptcy laws of the respective sovereign entities. Most of the sovereign debt accepted by OCC is debt of the U.S. Government;



- *Issuer Credit Risk:* For letters of credit, money market instruments and debt securities, OCC considers the creditworthiness of the issuer. This risk is managed, with respect to money market funds, by requiring compliance with SEC Rule 2a-7, among other requirements, and with respect to letters of credit, by requiring minimum financial standards and concentration limits are also applied. For example, no more than 50% of a clearing member's margin on deposit may include letters of credit in the aggregate, and no more than 20% may include letters of credit issued by any one institution. Further, the total amount of letters of credit issued for the account of any single clearing member by one institution shall not exceed 15% of such institution's Tier 1 Capital;
- *Wrong-way Risk:* OCC has developed policies designed to limit the wrong-way risk posed by a clearing member's margin deposits. These policies involve limiting the valuation of margin deposits that would likely lose value in the event that the clearing member providing the collateral defaulted, particularly with respect to equity securities and exchange-traded notes issued by the clearing member or an affiliate of the clearing member; and
- *Liquidity Risk:* For all forms of collateral, OCC considers the liquidity risk. For example, for government securities it is conceivable that coupon payments might be delayed due to a government default related to the debt ceiling or short-term payment imbalances. OCC's Rules grant it sufficient flexibility to adjust the valuation assigned to such collateral in response to such liquidity risk considerations. Additionally, the concentration limits OCC applies to equity securities collateral also are designed to address liquidity risk.

In addition to market, credit and liquidity risk, collateral also presents operational and custodian risk. These factors are built into OCC's policies on collateral eligibility, and OCC also maintains separate policies and procedures designed to manage these risks, as discussed under Principles 16 and 17.

Key Consideration 2

An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

OCC revalues all clearing member collateral holdings and verifies them against the margin and Clearing Fund requirements every day. In making these valuations, OCC manages the market risk of collateral either by applying a traditional haircut approach or through a modeled approach by including the collateral within STANS, where OCC calculates the combined risk of cleared and collateral positions. This approach is known as collateral-in-margins. STANS is described in greater detail under Principle 6.

Modeled Approach

Under the collateral-in-margins approach, collateral is treated the same as a position in cleared contracts, incentivizing clearing members to pledge



collateral that has risk reducing properties when it interacts with their cleared positions. Risk associated with the collateral is based on each security’s unique volatility parameters, which are updated daily as a result of the STANS risk model econometric recalibrations processes. Securities that are included in STANS, and thus utilize a modeled approach to manage their risk, include common stock and non-inflation adjusted U.S. Government securities.

Haircut Approach

Collateral with market risk that is not managed by the modeled approach is subject to percentage haircuts. OCC develops a haircut approach for each asset class at the time the asset class is recommended for acceptance as margin and/or Clearing Fund collateral. The haircuts are codified in OCC’s Rules and their adequacy is evaluated on a daily basis and formally reviewed each month.

Collateral haircuts and the related monitoring processes are formally reviewed annually by OCC for adequacy. Recommended changes may be proposed in light of the previous year’s performance, emerging trends or the needs of the marketplace or other factors and must be presented to the Risk Committee for approval.

<p>Key Consideration 3:</p>	<p>In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.</p>
	<p>The modeled approach described above leverages STANS to value and mitigate the market risk related to accepted margin collateral deposits. Because the modeled approach utilizes the same robust econometric modeling techniques supported by STANS, specifically the use of a short-term and a long-run historical time series to model the volatility of an asset to the greater of the two, it captures numerous critical risk attributes (e.g., intraday revaluations, stressed market conditions, procyclicality, concentration and wrong-way risk).</p> <p>For those collateral types that are subject to haircuts, OCC’s Collateral Risk Management Policy dictates the usage of multiple historical price time series to capture both near-term changes in market volatility and long-run volatility, which serves as a floor to mitigate pro-cyclicality.</p>
<p>Key Consideration 4:</p>	<p>An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.</p>
	<p>To properly manage concentration risk, OCC considers the average daily trading volume for each security in a clearing member account in relation to OCC’s assumptions regarding its ability to liquidate assets. With respect to each equity security deposited as margin, OCC effectively limits the</p>



number of shares that can be given value to two times the 90-day average daily volume, unless the security is hedging a cleared position. Shares exceeding the threshold level, while remaining pledged, do not receive any collateral value and are not included in margin calculations. This is systematically enforced on both a start-of-day and intra-day basis.

Additionally, clearing members are not allowed to pledge more than 5% of the total number of outstanding shares of any one fund when posting money market fund assets as collateral.²⁸

Annually, OCC staff analyzes the adequacy of this concentration risk policy and presents its findings to the Risk Committee, which has the final authority to approve any change in the concentration risk threshold levels.

Key Consideration 5:

An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.

The only form of cross-border collateral that OCC currently accepts is Canadian Government securities. To account for the exchange rate risk, OCC applies an additional haircut. Canadian Government securities accepted as collateral are subject to the same risk consideration acceptability analysis described above under Key Consideration 1.

Key Consideration 6:

An FMI should use a collateral management system that is well-designed and operationally flexible.

Collateral is frequently exchanged between OCC and its clearing members. To manage this, OCC maintains an effective and comprehensive collateral management process that covers the end-to-end collateral flow. In order to ensure smooth operations under times of market stress, OCC's relies on automated processes and maintains staffing levels adequate to support the system during peak utilization periods.

The Collateral Management System

OCC's collateral management system consists of several modules in ENCORE. It is highly automated and yet is flexible enough to accept a variety of collateral types and maintain the same performance, efficiency, and effectiveness for each type. The system provides clearing members with an overview of their collateral inventory and value, margin requirements, margin deficits that are "rolled-up" from certain related accounts, and the excess/deficit balance of their margin accounts. The various modules also allow clearing members to view and manage their collateral inventory of cash, letters of credit, government securities, valued securities, specific deposits, escrow deposits and money market funds.

²⁸ Though OCC still classifies money market funds as an acceptable form of collateral generally, OCC currently does not permit any money market fund shares to be deposited as collateral.

The system is designed to accommodate large numbers of automated transactions and is stress-tested annually as part of high-volume system testing. The system is also designed to ensure that a clearing member is never allowed to go into a collateral deficit situation as the result of a collateral withdrawal or substitution, and it reports the excess or deficit status of each account in real-time. To ensure the system's continued high-quality performance, OCC conducts annual regression tests that assess various metrics around the performance of the system.

OCC requires a perfected security interest in the collateral pledged or delivered by clearing members. When interfacing with another FMU, OCC also may rely on legal pledge agreements to accomplish the same goal. Prior to implementing any custodial process dealing with either free-deliveries or pledges, OCC first analyzes the custodial processing, considering operational aspects of maintaining custody of the collateral and the manner in which OCC can perfect a security interest in the collateral considering any relevant bankruptcy laws.

Collateral deposits and withdrawals may be facilitated through ENCORE, and clearing members may substitute deposited collateral for other acceptable forms of collateral and request the release of cash from any account they hold with OCC, subject to OCC's ability to reject a withdrawal request in certain situations as specified in OCC's Rules.

Margin Call Management

If a clearing member does not meet a required margin call within one hour of notification by OCC, the clearing member is considered to be in default, and OCC would consider suspension and liquidation of the member's positions. This is carried out pursuant to Chapter XI of OCC's Rules and OCC's Default Management Policy. In circumstances where the failure to settle within an hour is operational in nature, e.g., the transfer of the collateral to the bank was delayed before settlement was approved, OCC may consider the technical default to be a violation of OCC's Rules, but it would not suspend the clearing member.

Portfolio Reconciliation

OCC performs daily balancing of collateral activity, utilizing reports generated by ENCORE, as well as activity reports provided by or retrieved from OCC's custodial or settlement banks. Additionally, systematic inventory discrepancy reports are produced daily, comparing collateral assets maintained in ENCORE to the inventory maintained in OCC's accounts at the applicable bank or depository. Any discrepancy identified is required to be immediately addressed.

Collateral Reinvestment Options

OCC invests margin and Clearing Fund cash collateral in overnight bilateral reverse repurchase agreements. As collateral to the trade, OCC receives 102% in U.S. Government securities. Interest proceeds from the investment are retained by OCC. Collateral reinvestment is also subject to OCC's Cash and Investment Management Policy, which is described in greater detail under Principle 16.

Collateral Rehypothecation and Substitution

OCC is only permitted to rehypothecate margin collateral for financing purposes when a clearing member has defaulted, or OCC anticipates that there may be a default. OCC is permitted to rehypothecate Clearing Fund securities in order to access liquidity facilities to satisfy anticipated liquidity needs at the discretion of OCC's management. In the event that a clearing member requests the release of a security that has been rehypothecated, OCC can initiate a substitution of securities with the provider of the liquidity facility, in order to make available the requested security.

Collateral Reporting

OCC systematically generates core end-of-day activity and inventory reports that are available to both clearing members and banks.

Additionally, clearing members and banks can generate on-demand activity and inventory reports via ENCORE. Activity reports can be generated for current and historical data, and inventory data is current-day point-in-time reporting. In addition, inventory and transactional information can be viewed or exported via the collateral management system in ENCORE.

**Principle 6: MARGIN;
SEC Rule 17Ad-22(e)(6)**

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

SEC Rule 17Ad-22(e)(6) requires OCC 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 is monitored by management on an ongoing basis and regularly reviewed, tested, and verified.

**Key
Consideration 1**

A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.

The System for Theoretical Analysis and Numerical Simulations (“STANS”) is OCC’s proprietary risk management system that calculates clearing members’ margin requirements. STANS utilizes large-scale Monte Carlo simulations to forecast price movement and correlations in determining a clearing member’s margin requirement.²⁹

OCC computes margin each day independently for each account maintained by a clearing member. Intra-day calls for additional margin also may be made on accounts incurring significant losses. Under the STANS methodology, the daily margin calculation for each account is based on full portfolio³⁰ Monte Carlo simulations and is constructed conservatively to provide a high level of assurance that the overall value of cleared products in the account, plus collateral³¹ posted to meet margin requirements, will not be appreciably negative over a two-day horizon.

The STANS methodology also incorporates add-on charges designed to address specific risks and attributes associated with relevant products and portfolios cleared by OCC. For example, the STANS methodology includes a risk-based liquidation charge to account for the cost of liquidating a defaulting clearing member’s portfolio. The liquidation cost model approximates liquidation costs through charges associated with the delta

²⁹ The total margin requirement for an account is composed of two parts: (a) the Net Asset Value calculation or mark- to-market component, which is the cost to liquidate a position at current market prices; and, (b) the risk component, which provides a cushion to cover two-day market risk.

³⁰ Long option positions held in a clearing member’s (omnibus) securities customers’ accounts for which a clearing member has not issued “spread” instructions pursuant to OCC Rule 611 (Segregation of Long Positions) are not given any value in OCC margin calculations for such accounts for investor protection reasons. As a result, these segregated long positions do not offset any short positions carried in such accounts. Proprietary accounts and market-maker accounts, in contrast, are margined on a net basis.

³¹ Pursuant to the modeled approach, which is discussed above under Principle 5, equity securities and U.S. Treasury securities (excluding Treasury inflation-protected securities) that have been posted as collateral are included in the Monte Carlo simulations.

and vega of each unique portfolio. The STANS methodology also includes add-on charges designed to address the specific wrong-way risk (“SWWR”) that arises when a clearing member’s cleared positions contain equity securities or ETNs issued by the clearing member or its affiliates.³²

A summarized version of the STANS methodology is publicly available on OCC’s website. The interactive Risk Application, which is also available through OCC’s ENCORE Clearing System, assists participants in estimating their margin obligations in accordance with this methodology.

Customer segregated futures accounts are held separately from securities customers’ accounts and proprietary accounts, and OCC utilizes the Standard Portfolio Analysis of Risk methodology (“SPAN”) margin calculation system instead of STANS for determining the initial margin requirements of such segregated futures accounts. This methodology ensures that OCC margins all customer segregated futures accounts on a gross basis. Proprietary accounts and market-maker accounts, in contrast, are margined on a net basis. SPAN is a market simulation-based VaR system that calculates initial margin requirements for financial instruments and assesses the risk of a portfolio by calculating the maximum likely loss that could be suffered by the portfolio based on certain risk parameters, which include ranges of prices, volatility and other variables. While OCC uses SPAN to calculate initial margin requirements for each segregated futures account on a gross basis, OCC’s Rules also require it to simultaneously calculate what the margin requirements would be for the account on a net basis utilizing STANS. If at any time OCC observes that the initial margin requirement for the account calculated under STANS on a net basis exceeds the requirement calculated under SPAN on a gross basis, OCC collateralizes this risk exposure by applying an enhanced margin requirement in the amount of such difference.

The time at which margin payments are due during a settlement cycle is clearly defined in OCC’s Rules or in the specific instructions accompanying the margin call and is set and applied uniformly in Central Time. OCC maintains adequate controls and staffing to support clearing members and ensure that payment is made during each cycle. If a clearing member does not make a required margin payment by the specified deadline, the clearing member is considered to be in default and OCC may determine to suspend the clearing member and commence clearing member default procedures. These procedures are discussed in greater detail under Principle 13. In situations where a clearing member misses a deadline due to operational issues — e.g., a clearing member’s collateral is delayed in being

³² OCC also conducts stress tests designed to capture SWWR exposures for clearing member-issued ETNs that are not accounted for in its SWWR add-on charges. These scenarios are included in OCC’s sufficiency stress tests, which are discussed in OCC’s response to Principle 4, Key Consideration 4.



transferred to a settlement bank before settlement is approved — OCC would deem such an event to be a “technical” default but would not necessarily suspend the clearing member or commence default management procedures.

Key Consideration 2

A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.

OCC relies both on exchanges and data vendors for the price data used in its margin calculations. OCC manages its price data vendor relationships to ensure redundancy. This includes a preference for using multiple vendors for most products, including equity and index options and underlying interests, and the ability to use either exchange or vendor-provided data for proprietary products, including index and other cash-settled options and futures products. OCC also encourages its price vendors to build infrastructure-redundancy into their pricing systems, by maintaining independent data feeds and processing capabilities in their primary and back-up data centers.

OCC has automated and manual processes to review and edit price data to ensure price data integrity. OCC may override price data following a comparison to a third-party data source, after consultation with the exchanges or after comparison to surrounding contracts and prior day pricing. Pursuant to its Rules, OCC has the authority to modify prices or fix prices on its own, in the event a price, variance or other value that is used as, or to determine, a contract’s final settlement price is unreported, inaccurate, unreliable, unavailable or inappropriate for such use

Key Consideration 3:

A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements 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. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio’s distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the subportfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilizing, procyclical changes.

STANS Model Design

Initial margins, except with respect to segregated futures accounts, are calculated using STANS. STANS is a data-driven methodology, which relies heavily on robust historical price data to model the volatility of a product in addition to the correlation among different products. STANS utilizes Monte Carlo simulations of portfolio values at a two-day risk horizon, based on the behavior of numerous risk factors affecting values of clearing member accounts. STANS assumes a two-day closeout period for all products because OCC believes it is appropriate for all products it margins through STANS. The standard historical data period used for econometric estimation is ten years, with limited allowance for isolated missing observations. The minimum historical data requirement is 180 days for univariate parameters and 500 days for dependence parameters. For its current purposes, OCC believes these requirements for the historical data sample are appropriate.

The primary risk factors utilized by STANS are total returns and proportional changes in representative implied volatilities on various individual equity securities. Other risk factors considered include: (i) returns and implied volatilities on equity indices, (ii) changes in the calibrated coefficients of a model describing the yield curve for U.S. Government securities, (iii) “returns” on the nearest-to-expiration futures contracts of various kinds; and, (iv) changes in foreign exchange rates. For the volatility of each risk factor, the Monte Carlo simulations use the greater of: (i) the volatility level predicted by the model; and (ii) its sample estimate.

The “base component” of the margin requirement for each account is obtained from the risk measure known as 99% expected shortfall. The 99% expected shortfall exceeds the 99% VaR in that the expected shortfall accounts for tail-end risk and effectively serves as a weighted average of the exposures between the 99% VaR and the 100% VaR levels. As a result, the base component serves to ensure that STANS continuously satisfies the requirement that initial margins exceed a confidence level of 99%.

The base component is adjusted by the addition of a “stress test component.” The stress test component is obtained from consideration of the increases in the expected shortfall that would arise from: (i) market movements that are especially large and/or in which various kinds of risk factors would exhibit perfect or zero correlations, instead of the correlations otherwise estimated from historical data; or (ii) extreme adverse idiosyncratic movements in individual risk factors to which the account is particularly exposed.

Several other additional components of the overall margin requirement exist but are considerably smaller than the base and stress test components, and many of them affect only a minority of accounts.

SPAN Model Design

OCC calculates the initial margin requirements for segregated futures accounts using SPAN. SPAN is a market simulation-based methodology that calculates initial margin requirements for a wide variety of financial instruments including futures, options, physical commodities, equities, or any combination of these instruments. SPAN assesses the risk of a portfolio by calculating the maximum likely loss that could be suffered by the portfolio based on SPAN risk parameters set by an exchange or DCO. These risk parameters, known as “scan ranges,” include ranges of prices, volatility, and other variables. Using these scan ranges, SPAN simulates a certain number of market scenarios, known as “risk scenarios,” and calculates a “SPAN risk array,” which is a set of numerical values that indicate how a particular contract is expected to gain or lose value under the various risk scenarios. The risk array representing the maximum likely loss to a portfolio is then used to determine margin requirements. OCC sets the SPAN scan ranges for cleared contracts held in segregated futures accounts based on a review of both two years and five years of two-day daily returns that will be analyzed for each tenor of cleared contract. The time-series generating the larger scan range is selected to mitigate procyclicality.³³ In the event that a sufficient daily return history is unavailable, OCC utilizes the model output returns produced by STANS to set the SPAN scan ranges. Scan ranges are initially set to provide coverage for a minimum 99% confidence level. OCC uses the price history from the futures exchange that lists a particular contract to establish the minimum margin threshold. In the event that a contract is listed by a futures exchange that is economically equivalent to another futures exchange’s contract, OCC uses the SPAN parameters from the primary market to establish the minimum margin threshold.

OCC resets the minimum SPAN scan ranges on an at least quarterly basis.

OCC continuously assess the current SPAN scan ranges by comparing changes in settlement values to the established SPAN scan ranges on a daily basis and updating scan ranges as needed based on established procedures.

On an annual basis, OCC reviews the adequacy of both STANS and SPAN, and reports findings and recommendations to the Risk Committee. The Risk Committee is responsible for approving any changes to the methodology prior to its implementation.

³³ For certain products OCC will utilize daily price returns and may also adjust for seasonality. This approach is utilized where the standard industry practice for economically equivalent products traded on multiple market centers.

**Key
Consideration 4:**

A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.

OCC utilizes the Portfolio Revaluation System within ENCORE to revalue clearing member portfolios throughout the day to calculate updated account net asset value. In order to protect against extreme intra-day market volatility, OCC's Rules grant it the authority to issue intra-day margin calls. OCC notifies by phone each clearing member that has a deficit as a result of an intra-day margin call and instructs the clearing bank to debit funds from such clearing member's account and credit OCC's account. The clearing member must satisfy the deficit within one hour.

Generally speaking, margin calls are issued between 11:00 AM and 1:30 PM, when unrealized losses are observed for an account, based on start-of-day positions, exceeding 50% of that account's total risk charges.

Margin calls are subject to a minimum value of \$500,000. Margin calls outside of this window must be approved by the Executive Chairman, CEO, COO, Chief Risk Officer or Chief Financial Risk Officer.

Additionally, OCC may issue "holiday" margin calls when markets are open, but OCC or banks are closed, to collect additional margin prior to the holiday

**Key
Consideration 5:**

In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorized to offer cross-margining, they must have appropriate safeguards and harmonized overall risk-management systems.

OCC's margin methodologies permit the offsetting of unsegregated long and short options within the same series on a contract-for-contract basis to arrive at a net long or net short contract quantity to be used in the margin calculation. STANS also incorporates risk-based offsets between product-pairs for which, based on its Monte Carlo simulations, STANS has found a correlation between the risk of one product and the risk of the other. As described above under Key Consideration 3, STANS incorporates a stress test component and OCC may collect additional margin in response to the stress test results.

OCC does not net positions of different customers against one another or allow any risk offset between positions of different customers in segregated futures accounts.

Cross-Margining Programs

OCC uses the term “cross-margining program” to mean an arrangement whereby a clearing member can elect to combine positions in certain securities derivatives regulated by the SEC with positions in futures products regulated by the CFTC in order to permit the calculation of a single margin requirement for the clearing member across the jurisdictional boundary based upon the net risk of positions that may be hedging or offsetting each other. Cross-margining increases the pricing efficiency and liquidity of options and futures markets while decreasing the over-collateralization of inter-market hedged position risk at the clearinghouse level. A list of products eligible for cross-margining is maintained on OCC’s website.³⁴

CME Cross-Margining Program

OCC has established a cross-margining program with CME. The arrangement is also discussed under Principle 20. OCC’s cross-margining agreement with CME US provides that each party may use its own margin program to calculate a margin requirement on a clearing member’s cross-margining account and the required margin will be the higher of the two numbers, or they may elect to rely on the margin calculation of one of them. Either clearing organization may call for additional margin at any time if it deems such a call to be prudent. In practice, the clearing organizations work cooperatively to harmonize their respective margin procedures in ways that both clearing organizations agree are prudent and not excessive.

Internal Cross-Margining Program

OCC is both a DCO and a registered securities clearing agency, and therefore also maintains an “internal cross-margining program” permitting the cross-margining of certain SEC-regulated products cleared by OCC with CFTC products also cleared by OCC. In the case of proprietary positions of a clearing member, cross-margining is essentially automatic since proprietary accounts of a clearing member are not subject to segregation requirements, and proprietary positions of a clearing member in both SEC- and CFTC-regulated products can be carried in the clearing member’s “firm” account at OCC. However, because segregation requirements ordinarily prohibit the combining of the property of securities and futures customers, a special “internal cross-margining” account must be established on the books of OCC and conducted according to applicable orders of the respective regulatory agencies. These accounts are treated for regulatory purposes as futures accounts and limited to the activity of market professionals.

In all of OCC’s cross-margining programs, margin offsets are provided only where OCC’s margin systems show sufficient risk offset from related positions on opposite sides of the market to justify a lower margin requirement.

³⁴ <https://www.theocc.com/Risk-Management/Cross-Margin-Programs>.

**Key
Consideration 6:**

A CCP should analyze and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting – and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.

Daily Backtests

OCC conducts daily backtests for each margin account, analyzing in detail all accounts showing excessive losses. The purpose of these backtests is to statistically evaluate the basic risk-covering assumptions used by STANS.

A secondary purpose of the backtests is to find potential problems and deficiencies with OCC's risk-assessment process. Such problems may involve both technical and model-related issues. For example, technical problems may include issues such as product setups, contract adjustments due to corporate actions or dividend and coupon payments. Model-related problems may include issues such as the accuracy or adequacy of pricing models, price-editing functions, estimated univariate distributions or missing model components such as implied volatility or interest rates.

All accounts experiencing total margin exceedances are analyzed in detail by OCC's Financial Risk Management department to determine the cause(s) for the exceedances. The Risk Application, various providers and vendors of market data and other tools are used in the analysis. OCC's Quantitative Risk Management department is responsible for reporting any identified unique or systematic problems to the responsible business units on a timely basis.

OCC tracks reoccurring exceedances in clearing member accounts and any model related causes. Quantitative Risk Management analyzes all exceedances of total margin for clearing member accounts and also statistically analyses VaR exceedances on a model and product basis.

These findings are presented monthly to department leadership and OCC's Model Risk Working Group. Models that indicate statistically significant exceedances rates and have material open interest are flagged for in-depth analysis by Quantitative Risk Management department.

Reporting Backtest Results

Daily backtesting results are accumulated for the preparation of monthly, quarterly, and yearly reports. At least annually, OCC also reviews the overall adequacy of OCC's margin methodology. The analysis behind these

assessments is presented to the Risk Committee for evaluation and, to the extent the analysis reveals any inadequacies or unexpected results, any proposed changes to the methodology are subject to the Risk Committee's approval.

Key Consideration 7:

A CCP should regularly review and validate its margin system.

OCC's Model Validation Group is tasked with overseeing model validation, evaluating model assumptions and mitigating factors, and ensuring effective and independent challenges are made to the models. The mission of the Model Validation Group as the "second line of defense" in OCC's enterprise risk management framework is to provide an independent assessment of OCC's quantitative risk models, including the models underlying OCC's margin system.

Before any new or modified model is implemented, the Model Validation Group first certifies that it has sufficiently reviewed the model's performance in relation to its intended use and that OCC's assumed level of risk is adequately mitigated. Specifically, the model validation process involves three key elements:

Evaluation of conceptual soundness, including development evidence. This involves the Model Validation Group testing the underlying assumptions that comprise the model to determine if the model is designed in accordance with its intended purpose;

Ongoing monitoring, including process verification and benchmarking. After the model is deployed, the Model Validation Group monitors it on an ongoing basis to determine that it is performing as intended; and

Outcome analysis, including backtesting. The outcome of the model is examined to determine whether or not the model has been implemented correctly and to judge whether or not the model is performing as intended. This involves model validation backtesting, where actual outcomes are compared against model forecasts during a sample period not used in the model development process.

OCC also performs a formal monthly review of margin and Clearing Fund assumptions and parameters. Validation activities continue on an ongoing basis after a model is put into use, to track known model limitations and to identify any new ones. The Model Validation Group conducts a periodic review, at least annually, of each model to determine whether it is working as intended and if the existing validation activities are sufficient. The Model Validation Group sets forth the results of the model assessment in a report that is submitted to the Chief Risk Officer and that contains observations and recommendations for model improvement and risk mitigation

**Principle 7: LIQUIDITY RISK;
SEC Rule 17-Ad-22(e)(7)**

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

SEC Rule 17Ad-22(e)(7) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to effectively measure, monitor, and manage the liquidity risk that arises in or is borne by it, by meeting, at a minimum, the ten specified requirements.

Key Consideration 1

An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers and other entities.

As a covered clearing agency under SEC rules and a registered DCO with the CFTC, OCC is required to manage its liquidity risks pursuant to certain provisions of the Securities Exchange Act and the Commodity Exchange Act and the rules thereunder.³⁵ OCC maintains a Liquidity Risk Management Framework, designed to effectively identify, measure, monitor, and manage the liquidity risks, which is approved annually by the Risk Committee and the Board.

Key Consideration 2

An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

OCC’s primary liquidity risks occur between the point of a clearing member default and the completion of the liquidation and settlement of the defaulted clearing member’s obligations. These obligations may include (i) trade premiums, (ii) mark-to-market (“MTM”) obligations on futures and stock loan positions, (iii) cash-settled exercise and assignment (“E&A”) activity, (iv) auction payments, (v) settlements resulting from the E&A of physically- settled options, and (vi) liquidation agent funding.

OCC also monitors and manages its liquidity risk from a number of supporting institutions, such as settlement banks, custodian banks, central banks, and liquidity providers. This includes rigorous onboarding and monitoring processes, including but not limited to (i) conducting initial and ongoing due diligence to confirm each commercial institution meets OCC’s

³⁵ See, e.g., 15 U.S.C. 78q-1; 17 CFR 240.17Ad-22(e)(7); 7 U.S.C. 7a-1(c)(2)(B), (D), (E) and (F); 17 CFR 39.11.



financial and operational standards; (ii) confirming that each commercial institution has access to liquidity to meet its commitments to OCC; (iii) monitoring and managing direct, affiliated, and concentrated exposures; and (iv) meeting with these commercial institutions and conducting operational reviews as required by OCC's policies and procedures.

Key Consideration 3:

A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

This Key Consideration is not applicable to OCC.

Key Consideration 4:

A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.

OCC maintains sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of foreseeable stress scenarios that includes, but are not limited to, the default of the participant family that would generate the largest aggregate payment obligation for OCC in extreme but plausible market conditions. As noted above, to track and measure liquidity risk due to clearing member default, OCC employs a liquidity risk management framework that includes the assessment of its exposure to each of the following risk factors: (i) trade premiums, (ii) MTM obligations on futures and stock loan positions, (iii) cash-settled E&A activity, (iv) auction payments, (v) settlements resulting from the E&A of physically-settled options, and (vi) liquidation agent funding.

Under OCC's Liquidity Risk Management Framework, OCC maintains the following categories of liquidity resources: (i) "Base Liquidity Resources," (ii) "Available Liquidity Resources," (iii) "Required Liquidity Resources," and (iv) "Other Liquidity Resources." OCC's Base Liquidity Resources are set at an amount determined by OCC's Board on comprehensive analysis, including stress testing, so that OCC maintains sufficient liquid resources to meet a Cover 1 standard. Base Liquidity Resources are comprised of qualifying liquid resources (as defined in Rule 17Ad-22(a)(14) under the Securities Exchange Act) in the form of assets that are readily available and convertible into cash through prearranged funding arrangements and required Clearing Fund cash on deposit. Available Liquidity Resources are comprised of OCC's Base Liquidity Resources plus any Clearing Fund cash deposits in excess of the minimum required amount. These resources supplement OCC's Base Liquidity Resources and are included in the calculation of liquidity resources available to OCC on a given day.³⁶

Required Liquidity Resources are comprised of OCC's Available Liquidity Resources plus any amount of cash margin deposits of a clearing member group required under OCC's Contingency Funding Plan (described in further detail below). These required cash margin deposits supplement OCC's Base Liquidity Resources and are only included as a Required Liquidity Resource for the respective clearing member group depositing such cash.

Other Liquidity Resources are those liquid resources that may or may not be available to OCC in a default situation (e.g., non-mandatory cash deposits of the defaulting clearing member; other margin deposits of the defaulting clearing member, including letters of credit, Government Securities, and Government Sponsored Entity securities that may be liquidated for same-day or next day settlement). Other Liquidity Resources are not committed resources; therefore, they are not included in OCC's Base, Available, or Required Liquidity Resource calculations. These resources may, however, be available in a default situation and could be used to address foreseeable liquidity shortfalls that would not be covered by OCC's committed resources and help OCC seek to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations.

³⁶ OCC generally require a two-day notification period if a clearing member requests to substitute Government Securities for cash deposits above their minimum requirement. Once the substitution request is made, OCC would remove the cash deposits in question from subsequent Contingency Funding Plan calculations.

<p>Key Consideration 5:</p>	<p>For the purpose of meeting its minimum liquid resource requirement, an FMI’s qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.</p> <p>OCC’s minimum liquidity resource requirement is determined according to its largest liquidity need as described immediately above in Key Consideration 4, which includes the default of the clearing member and its affiliates that would generate the largest aggregate liquidity obligation in extreme but plausible market conditions. OCC maintains Base Liquidity Resources comprised of qualifying liquid resources as specified in Key Consideration 5, which includes committed credit facilities, committed repurchase agreements, and required cash deposits in OCC’s Clearing Fund (including the Clearing Cash Fund Requirement). OCC’s Rules and Contingency Funding Plan permit OCC to draft a clearing member in advance for cash if projected liquidity demands for that clearing member exceed certain thresholds in OCC’s sufficiency stress testing scenarios (as described below). As a SIFMU, OCC may be eligible to receive discount and borrowing privileges from a Federal Reserve Bank under unusual or exigent circumstances. However, for purposes of meeting its minimum liquid resource requirement, OCC does not count any liquidity that might be available as a result of this potential access.</p>
<p>Key Consideration 6:</p>	<p>An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as part of its liquidity plan.</p> <p>This Key Consideration is not applicable to OCC.</p>

<p>Key Consideration 7:</p>	<p>An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider’s performance reliability with respect to a particular currency, a liquidity provider’s potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.</p>
	<p>OCC performs due diligence on its liquidity providers to confirm it has a reasonable basis to believe each of its liquidity providers has (i) sufficient information to understand and manage the potential liquidity demands of OCC and its associated liquidity risk and (i) the capacity to perform as required under its commitments. In addition, OCC periodically, and no less than annually, performs test draws on its committed liquidity facilities to assess their performance and reliability. OCC also maintains its liquidity resources only at banks that meet certain standards of creditworthiness, and invests cash resources in overnight investments in highly marketable collateral as prescribed in the investment policy maintained by OCC. OCC monitors the financial and operational performance of its liquidity providers and banks as outlined in applicable policies.</p>
<p>Key Consideration 8:</p>	<p>An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.</p>
	<p>On July 18, 2012, OCC was designated as a SIFMU by FSOC. As part of this designation, OCC is eligible to receive discount and borrowing privileges from a Federal Reserve Bank under unusual or exigent circumstances pursuant to Section 806 of Title VIII of Dodd Frank. OCC does not consider its eligibility for such central bank borrowing privileges as a necessary part of its liquidity plan to meet its liquidity needs. However, OCC maintains accounts with the Federal Reserve Bank of Chicago, in accordance with Federal Reserve Regulation HH, as a means of reducing custody risk. For example, OCC maintains an account at the Federal Reserve Bank of Chicago in which it is authorized to hold Clearing Fund cash deposits and Clearing Member non-customer (or “house”) cash margin assets. OCC also maintains accounts at the Federal Reserve Bank of Chicago designated as customer segregated accounts under Section 4(d) of the Commodity Exchange Act.</p>

**Key
Consideration 9:**

An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.

Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.

OCC performs daily liquidity stress testing using standard and predetermined parameters and assumptions, which leverage the output of stressed scenarios and prices generated under OCC's comprehensive stress testing and Clearing Fund methodology, to evaluate the adequacy of its liquidity resources and adjust its liquidity risk-management framework, if necessary. The scenarios used are pre-identified by OCC's stress test working group and the output of these scenarios are used for liquidity resource evaluation and reviewed daily by OCC's Financial Risk Management department. The stress tests in question consider a range of relevant stress scenarios and possible price changes in liquidation periods, including but not limited to: (1) relevant peak historic price volatilities; (2) shifts in other market factors including, as appropriate, price determinants and yield curves; (3) the default of one or multiple members; (4) forward-looking stress scenarios; and (5) reverse stress tests aimed at identifying extreme default scenarios and extreme market conditions for which the OCC's resources would be insufficient.

OCC's Base Liquidity Resources are determined by OCC's Board based on a recommendation from OCC's Risk Committee. On an annual basis (or more frequently as needed), Financial Risk Management presents to the Board and Risk Committee an analysis summarizing the projected liquidity demands OCC may face under a variety of stress scenarios, including: (i) the sufficiency of OCC's Base Liquidity Resources against OCC's liquidity risk tolerance of a 1-in-50-year market event at a 99.5% confidence interval over a two-year look back period; (ii) extreme historical scenarios such as a 1987 historical market event and 2008 historical market events; and (iii) certain scenarios used to size OCC's Clearing Fund. This analysis may also include the results of a comprehensive review of any parameters and assumptions used by OCC's stress testing system, the output of which is



used to project potential liquidity demands under stressed market conditions. In addition, the analysis may include the current composition of OCC's various liquidity resources and recommended changes, if applicable.

OCC's daily stress testing also includes a suite of scenarios designed to measure the sufficiency of potential exposures in excess of OCC's liquidity resources to determine if additional risk mitigation is needed when those exposures indicate potential breaches of certain thresholds under OCC's Contingency Funding Plan. OCC's Contingency Funding Plan enables it:

(1) collect additional liquidity resources from a clearing member group when that clearing member group's projected or actual liquidity risk exceeds certain thresholds or (2) quickly supplement OCC's Available Liquidity Resources outside of the annual sizing process, should the circumstances warrant.

OCC also maintains informational stress testing scenarios designed to monitor and assess OCC's liquidity resources under a variety of stress conditions, which may include extreme but implausible scenarios and reverse stress test scenarios.

**Key
Consideration 10:**

An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

OCC operates a single net settlement process with all settlements occurring in the morning. The cash settlement process involves debiting the bank accounts of clearing members for amounts owed to OCC prior to the settlement time for such payments and crediting the bank accounts of clearing members for amounts owed to the clearing member at or prior to the settlement time for such payments.

OCC's primary resources to ensure that it will be able to fulfill its settlement obligations with respect to its available financial resources are its Clearing Fund Cash Requirement and committed liquidity facilities. OCC relies on committed liquidity facility providers to provide OCC with immediate access to liquidity in the event of a clearing member suspension, a failure of a bank or other securities or commodity clearing organization to meet an obligation owing to OCC, or to obtain liquidity to meet its same-day settlement obligations.

OCC maintains several tools to address foreseeable and potentially unforeseeable liquidity shortfalls. OCC conducts daily sufficiency stress tests which allow it to call for additional cash deposits from clearing members when those scenarios project potential liquidity shortfalls exceeding certain thresholds of OCC's liquidity resources (in accordance with the Contingency Funding Plan discussed in Key Consideration 9). As discussed in Principle 4, OCC also has the authority to temporarily increase the Clearing Fund Cash Requirement up to an amount that includes the total size of the Clearing Fund to respond to changing business or market conditions for the protection of OCC, clearing members or the general public. Additionally, as discussed in Key Consideration 9 above, OCC would utilize Other Liquidity Resources (e.g., non-compulsory cash deposits of the defaulting clearing member or other margin deposits of the defaulting clearing member, including letters of credit, Government Securities, and Government Sponsored Entity securities that may be liquidated for same-day or next day settlement) that may be available in a default situation to address foreseeable and potentially unforeseeable liquidity shortfalls. These tools allow OCC to address potentially uncovered liquidity shortfalls without unwinding, revoking, or delaying same-day and where appropriate, intraday and multiday, settlement obligations.

In the event of a clearing member default that results in charges against OCC's Clearing Fund, OCC requires each clearing member to replenish its proportionate amount of the charges. Specifically, Rule 1006(h) provides that whenever an amount is paid out of a clearing member's contribution, whether because of a proportionate charge against all clearing members or to satisfy a clearing member's obligations from its own contribution, the clearing member is liable to make good the deficiency in its Clearing Fund contribution resulting from such payment. Each clearing member's obligation to replenish the Clearing Fund is ultimately limited by OCC's 200% assessment cap, within the applicable cooling-off period (as described in Rule 1006(h)(B)). This allows OCC to replenish any liquidity resources that were employed during a stress event.

**Principle 8: SETTLEMENT FINALITY;
SEC Rule 17Ad-22(e)(8)**

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

SEC Rule 17Ad-22(e)(8) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to define the point at which settlement is final no later than the end of the day on which the payment or obligation is due and, where necessary or appropriate, intraday or in real time.

**Key
Consideration 1**

An FMI’s rules and procedures should clearly define the point at which settlement is final.

Cash Settlement

OCC uses commercial banks to facilitate cash settlement of daily payment obligations with its clearing members. OCC’s relationship with each of its approved settlement banks is governed by a Cash Agreement. Pursuant to the Cash Agreement and OCC’s Rules, OCC issues “settlement instructions” to each settlement bank to credit or charge the account of a clearing member, and correspondingly to charge or credit OCC’s account, with a specific dollar amount, which each settlement bank then processes by a specified time. Settlement finality occurs when a settlement bank either accepts/confirms the settlement instruction or is silent past the applicable deadline, as specified in the Cash Agreement.

OCC relies on the enforceability of each Cash Agreement to ensure that settlement finality is achieved in all relevant jurisdictions with a high degree of legal certainty.

NSCC Settlement—Physically-Settled Stock Options and Futures

OCC’s Rules provide that delivery of, and payment for, securities underlying physically settled stock options and single stock futures cleared by OCC are effected through the facilities of a correspondent clearing corporation. Accordingly, settlement obligations arising from the exercise or assignment of stock options and the maturity of stock futures are ordinarily reported by OCC to NSCC and settled within NSCC’s Continuous Net Settlement system. OCC’s Rules and its agreement with NSCC specify the time at which responsibility for the settlement of physically settled stock options and stock futures passes from OCC to NSCC. Thereafter, settlement finality is governed by NSCC’s – and not OCC’s – rules and procedures.

<p>Key Consideration 2</p>	<p>An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.</p> <p>Pursuant to OCC Rule 502 (Daily Premium and Futures Variation Settlement), each clearing member is required to pay to OCC prior to the settlement time for such payments the amount of any net daily premium and variation payments due to OCC for each of such clearing member's accounts on that day. Cash amounts due from OCC to clearing members in each account are paid at or prior to the settlement time for such payments on each business day. These regular daily settlements also include exercise settlement amounts due to or from clearing members in respect of exercise settlement of cash-settled options and any other cash payments due to or from the clearing member on the same business day. Such payment rights and obligations are generally netted as permitted by OCC's Rules, though OCC may require any clearing member to pay the <i>gross</i> amount due to OCC in respect of all of its confirmed trades reaching settlement on that business day without credit for amounts payable to the clearing member. OCC is authorized to withdraw funds due to OCC from the clearing member's bank account. Intra-day variation settlements with respect to some or all classes of futures may be effected from time to time or regularly on each business day as determined by OCC and as communicated to the affected clearing members by OCC.</p>
<p>Key Consideration 3:</p>	<p>An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.</p> <p>Clearing members have no right or power to revoke a payment instruction a settlement bank has become obligated to make pursuant to the terms of the Cash Agreement, as described above under Key Consideration 1, or to reverse a payment that has been completed. Similarly, under the terms of OCC's Rules, its agreements with custodian banks or under the rules of DTC, once securities have been transferred (or pledged) to OCC's accounts they only may be returned to the depositing clearing member upon OCC's approval.</p>

**Principle 9: MONEY SETTLEMENTS;
SEC Rule 17 Ad-22(e)(9)**

An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimize and strictly control the credit and liquidity risk arising from the use of commercial bank money.

SEC Rule 17Ad-22(e)(9) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to ensure it considers conducting its money settlements in central bank money, where available and determined to be practical by the board of directors of OCC, and minimizes and manages credit and liquidity risk arising from conducting its money settlements in commercial bank money if central bank money is not used by OCC.

Key Consideration 1

An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

Currently OCC conducts money settlements through approved commercial banks.

Key Consideration 2

If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.

OCC conducts its money settlements through commercial bank accounts, denominated in US dollars. OCC minimizes credit and liquidity risks by contracting only with approved settlement banks that meet OCC standards. Credit and liquidity risks are minimized by using sound commercial banks from a credit risk perspective and reliability from an operational risk perspective.

Key Consideration 3:

If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalization, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.

In order to manage the credit and liquidity risk that arises from using commercial settlement banks, OCC maintains procedures providing for the ongoing monitoring of all such banks. This includes ongoing monitoring for compliance with certain operational and financial requirements, as well as applying a “watch level” framework, which provides for enhanced scrutiny upon the occurrence of certain events signaling the deteriorating of a bank’s financial condition. OCC pays special attention to banks that have significant or repeated operational incidents, as well as banks that have triggered heightened surveillance under the watch level framework.

Ongoing Operational Monitoring

OCC requires all banks to continue to satisfy the minimum operational requirements described above under Key Consideration 1. OCC's monitoring includes the following components:

- Monitoring of daily processing of all cash and securities activity;
- Monitoring of the timeliness of settlement approvals, and of operational difficulties a bank has using OCC's cash settlement system or other mechanisms utilized to support cash settlement;
- Monitoring of the cash movements between banks and the processing accuracy of transactions, including reviewing for duplicate debits and credits applied by the bank and any other bank errors;
- Evaluation of the responsiveness of a bank to general questions or requests;
- Monitoring of the availability of a bank's proprietary banking systems for initiating wire transfers and performing real-time account balance reporting; and
- Requesting a copy of a bank's most recent annual report.

OCC seeks to remediate with the relevant bank any operational issues discovered through the monitoring process, including, but not limited to bank errors, late settlement approvals, late funding by credit facility, and securities financing banks and bank systems not working. These operational issues and the remediation performed by the banks are documented and maintained by OCC. Certain issues, such as late settlements and the movement of collateral without OCC's instruction or any other significant bank operational issues, are reported immediately.

Each month, OCC internally discusses any operational problems presented by the banks from the prior month.

OCC staff conducts an annual review with the banks, focusing on operational performance from the prior year. The discussion includes a review of the bank's performance, as well as any system changes, fee increases or general changes the bank may be anticipating, that would affect OCC's relationship with the bank.

Ongoing Financial Monitoring

OCC conducts additional monitoring of banks' financial and other related requirements including, but not limited to, the following:

- All banks' financial reports are monitored against OCC's watch level framework, which includes parameters for capital ratios, credit ratings and profitability, among others;

- General market news and events, as well as common stock and credit default swap prices, are monitored for any potential impact on the creditworthiness of the bank; and
- Aggregate bank/depository exposures are reported as needed, but no less than monthly. These reports include a breakdown by exposure type and cross-exposures, which typically include custodial collateral balances, credit extensions, settlement activity, and affiliated clearing member margin and uncollateralized position risk exposures.

The above information may lead to an elevation of a bank's watch level and/or monthly reporting to OCC's management, which may result in a limitation on or reduction in exposures and/or other protective measures deemed necessary at OCC's sole discretion. OCC's management and the Risk Committee are informed of violations of the watch level parameters, depending on severity.

OCC has established risk management policies regarding the selection of settlement banks. Banks being considered for a new type of relationship with OCC are required to submit to a formal evaluation that includes a review of the bank's: (1) ownership, structure, headquarters location and background; (2) scope of activity with OCC; (3) financial and credit data; (4) registration in the U.S. and with bank regulators; (5) current credit rating; and (6) proof of access to the Federal Reserve's Fedwire Funds Transfer Service, as necessary.

Prospective settlement banks also are required to meet certain operational and financial requirements.

Operational Requirements for Settlement Banks

OCC staff conducts a review of a prospective settlement bank's intended activity, staffing and system capabilities to determine if the bank satisfies its operational requirements. The type of relationship being considered influences the scope of the operational review. Pursuant to the operational requirements, each settlement bank is required to:

- maintain adequate staff to perform the services requested, including sufficient staffing and systems to address operational issues;
- maintain detailed business continuity and recovery and resolution plans;
- perform an Office of Foreign Assets Control check; and
- have received an unqualified opinion on the bank's most recent Standards for Attestation of Engagements No. 16 Service Organization Control.

OCC relies on its Rules and requires each clearing member to provide OCC with an "authorization to draft" form to ensure that it has the legal authority to obtain prompt access to the assets held at the bank.



As noted above, settlement banks are required to have access to the Federal Reserve’s Fedwire Funds Transfer Service in addition to possessing all operational capabilities discussed in the Cash Agreement, including the ability to meet settlement timeframes outlined in the Cash Agreement. Settlement banks also are required to be able to provide OCC with daily account balances.

Financial Requirements for Settlement Banks

All prospective settlement banks are required to meet certain financial criteria. OCC reviews a prospective bank’s organizational structure and ownership, financial condition/capital ratios and intended activity with OCC. Banks are evaluated against minimum requirements as well as early warning indicators described in OCC’s Bank Watch Level framework. OCC also assesses a prospective bank’s capital adequacy per the Federal Reserve’s Prompt Corrective Action framework. Additionally, OCC staff:

- Review the bank’s financial reports, whether annual or more frequent;
- Compare anticipated levels of exposure relative to the bank’s total risk-based capital to gauge the applicant’s financial wherewithal;
- Assess concentration risk; and
- Analyze cross-exposures with other approved banks and clearing members.

Settlement Bank Approval

Based on the above completed tasks, the Executive Chairman, CEO or COO must approve in writing any new relationship with a settlement bank.

Key Consideration 4:	If an FMI conducts money settlements on its own books, it should minimize and strictly control its credit and liquidity risks.
	This Key Consideration is not applicable to OCC.
Key Consideration 5:	An FMI’s legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.
	As discussed in Principle 8, each CSPA between OCC and a settlement bank clearly identify the time at which settlement finality and irrevocability occurs.

**Principle 10: PHYSICAL DELIVERIES;
SEC Rule 17Ad-22(e)(10)**

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

SEC Rule 17Ad-22(e)(10) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to establish and maintain transparent written standards that state its obligations with respect to the delivery of physical instruments and operational practices that identify, monitor, and manage the risk associated with such physical deliveries.

**Key
Consideration 1**

An FMI’s rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

OCC maintains rules that support physically settled equity options contracts, single stock futures contracts, and stock loan transactions. These rules set forth the obligations of delivering and receiving clearing members. Specifically, Chapter IX of OCC’s Rules (Delivery of Underlying Securities and Payment) governs the delivery of stock upon exercise of a physically settled stock option contract or maturity of a physically settled stock futures contract. Settlement for physically settled stock futures is further governed by OCC Rule 1302 (Delivery of Underlying Securities).

OCC Rules 2209 and 2209A govern the termination of stock loan transactions, for the Hedge and Market Loan programs, respectively.

With respect to physically settled stock options and stock futures, OCC’s rules generally provide for settlement through NSCC. Under OCC Rules 901(c) and (d), if a settlement obligation with respect to exercise of a physically settled stock option or maturity of a physically settled stock future is reported to and not rejected by NSCC, OCC generally has no further obligations with respect to the settlement. The physical settlement of exercised and assigned stock options and matured stock futures that settle “regular way” (as defined in the rules and procedures of NSCC) is governed by the NSCC Accord. The NSCC Accord specifies the time at which OCC’s obligation to guarantee delivery is extinguished and NSCC’s obligation begins, which occurs generally upon the receipt by NSCC of all required deposits to its Clearing Fund, calculated taking into account such positions. Physically settled stock futures that do not settle “regular way” (e.g., securities that settle on a T+1 basis) are generally settled through NSCC in accordance with OCC Rule 901(d) and the rules and procedures of NSCC.

OCC also acts as the guarantor of stock loan transactions submitted for clearing. For stock loan transactions supported by OCC, there is a physical delivery component, but delivery of the loaned stock occurs through the DTC’s systems. Under OCC Rule 2209 (Settlement) with respect to the



Stock/Loan Hedge Program, and under OCC Rule 2209A (Termination of Market Loans) with respect to the Market Loan Program, upon a clearing member failure OCC is not obligated to complete delivery and may fix a cash settlement value for the quantity of loaned stock outstanding.

OCC does not currently clear physically settled products other than the ones described above. However, in the past OCC has cleared other physically settled products and maintains rules governing such activity. Specifically, OCC Rule 1403 (Exercise Settlement of Treasury Securities Options) governs the delivery of Treasury securities upon exercise of physically settled Treasury options. Rules governing the settlement of physically settled metals futures and Treasury futures can be found in OCC Rules 1302A (Delivery of Underlying Metals) and 1302B (Delivery of Underlying Treasury Securities), respectively.

Key Consideration 2

An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

As described above, OCC provides, through its rules and agreement with NSCC, that delivery obligations with respect to physically settled equity options and single stock futures are settled at NSCC via the rules and procedures of NSCC. These securities are also stored at DTC. OCC does not physically settle or store any commodities.

**Principle 11: CENTRAL SECURITIES DEPOSITORIES;
SEC Rule 17Ad-22(e)(11)**

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimize and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilized or dematerialized form for their transfer by book entry.

SEC Rule 17Ad-22(e)(11) requires a covered CSD to establish, implement, maintain and enforce written policies and procedures reasonably designed to: (i) maintain securities in an immobilized or dematerialized form for their transfer by book entry, ensure the integrity of securities issues, and minimize and manage the risks associated with the safekeeping and transfer of securities; (ii) implement internal auditing and other controls to safeguard the rights of securities issuers and holders and prevent the unauthorized creation or deletion of securities; and, (iii) protect assets against custody risk through appropriate rules and procedures consistent with relevant laws, rules, and regulations in jurisdictions where it operates.

Principle 11 is not applicable to OCC.

**Principle 12: EXCHANGE-OF-VALUE SETTLEMENT SYSTEMS;
SEC Rule 17Ad-22(e)(12)**

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

SEC Rule 17Ad-22(e)(12) requires a covered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other, regardless of whether the covered clearing agency settles on a gross or net basis and when finality occurs.

**Key
Consideration 1**

An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.

OCC currently clears physically settled equity options contracts, cash-settled securities index options contracts, physically settled security futures contracts, cash-settled futures contracts, cash-settled options on futures contracts, and stock loan contracts through its Stock Loan/Hedge Program and Market Loan Program. Based on the text of Principle 12 and related guidance, OCC believes that it acts as an FMI that is an exchange-of-value settlement system when it settles transactions that involve two linked obligations, such as the delivery of securities against payment of cash or securities in connection with the purchase or sale of a security. Because linked obligations are not present, OCC does not believe that it acts an exchange-of-value system in the following circumstances and Principle 12 therefore does not apply: (i) the cash-settlement of securities index options contracts, futures contracts, and futures options contracts; and (ii) the creation of futures contracts. In such circumstances OCC makes its facilities available to Clearing Members to allow them to settle their contracts, and related details regarding such money settlements are discussed in OCC's response to Principle 9.

Absent further regulatory guidance on the possible application of Principle 12 to varying CCP settlement models, OCC believes that it satisfies Principle 12 with respect to the following transactions in the following ways:

- *Initial Issuance of Physically Settled Equity and Cash-Settled Securities Index Options Contracts:* OCC is treated as the issuer of all options contracts traded on the U.S. options exchanges under the U.S. securities laws. Under OCC's Rules, including Rule 406, OCC in nearly

all cases does not have the right to reject a confirmed trade if the purchasing clearing member fails to pay the purchase price. As a result, OCC eliminates any principal risk with regard to the initial issuance of such options contracts by relying on the resources in its default waterfall, including its mutualized Clearing Fund resources, to make settlement if a purchasing clearing member fails to pay the purchase price.

- *Exercise of Physically-Settled Equity Options Contracts:* OCC eliminates principal risk with regard to the exercise of physically-settled equity options contracts by having Rules, such as Rule 901, an agreement with NSCC (i.e., the NSCC Accord) and associated policies and procedures that provide that physical settlement and the CCP guarantee associated with settlement failure generally transfer to NSCC after such settlement obligations are reported to and are not rejected by NSCC and NSCC receives all required deposits to its clearing fund, calculated taking into account such positions. In the event the security to be settled is not eligible for settlement through NSCC or is rejected by NSCC under the terms of the NSCC Accord, OCC has Rules, such as Rule 904, that mandate DvP settlement of such exercises.
- *Settlement of Physically-Settled Security Futures Contracts:* OCC eliminates principal risk with regard to the settlement of matured physically-settled security futures contracts by having Rules, such as Rule 901, the NSCC Accord, and associated policies and procedures that provide that physical settlement and the CCP guarantee associated with settlement failure generally transfer to NSCC after such settlement obligations are reported to and are not rejected by NSCC and NSCC receives all required deposits to its clearing fund, calculated taking into account such positions. In the event the security to be settled is not eligible for settlement through NSCC or is rejected by NSCC under the terms of the NSCC Accord, OCC has Rules, such as Rule 904, that mandate DvP settlement of such matured physically- settled security futures contracts.
- *Establishment and Termination of Stock Loan Contracts through the Stock Loan/Hedge Program and Market Loan Program:* OCC eliminates principal risk with regard to stock loan contracts established through the Stock Loan/Hedge Program and Market Loan Program by having Rules, such as Rule 2202 and 2202A, that mandate DvP settlement at DTC of the establishment of such stock loan contracts. Similarly, OCC eliminates principal risk with regard to stock loan contracts terminated through the Stock Loan/Hedge Program and Market Loan Program by having Rules, such as Rules 2208 and 2209A, that that mandate DvP settlement at DTC of the termination of such stock loan contracts.

**Principle 13: PARTICIPANT DEFAULT RULES AND PROCEDURES;
SEC Rule 17Ad-22(e)(13)**

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

SEC Rule 17Ad-22(e)(13) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to ensure that OCC has the authority and operational capacity to take timely action to contain losses and liquidity demands and continue to meet its obligations in the event of a participant default.

**Key
Consideration 1**

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

OCC's Rules provide OCC with effective and clearly defined mechanisms to manage a clearing member default. A clearing member may be summarily suspended at any time by OCC's Board or a designated officer³⁷ of OCC in the event the clearing member experiences an event of default.

A detailed listing of default events is found in OCC Rule 1102(a) (Suspension), but generally they include:

The suspension or expulsion of the clearing member from another self-regulatory or other regulatory organization; the clearing member's failure to make timely delivery of cash, securities or property to OCC as provided in OCC's rules;

- Failure to make timely delivery of funds or securities to another clearing member or NSCC as provided for in OCC's rules; and
- A determination made by the Board or a designated officer that the clearing member is in financial or operational difficulty that suspension is necessary for the protection of OCC, other clearing members or the public on notice to one or more designated regulatory authorities.

OCC will advise the suspended clearing member, other clearing members, and appropriate regulatory authorities when it has suspended a clearing member.

To manage a clearing member default, OCC's rules ensure that OCC can take timely action to contain losses and liquidity pressures and continue to meet its obligations. Generally, OCC would close out open positions of the suspended clearing member in the most orderly manner practicable, which

³⁷ "Designated officer" is defined in OCC's By-Laws.

may include a private auction. Open long positions, short positions and covered short options positions and open long and short positions in futures may be closed out as provided for in OCC Rule 1106 (Open Positions), including by offset, also known as “netting,” and by other permitted transactions or means. To the extent that clearing member margin or Clearing Fund deposits are converted to cash, the cash is to be deposited into, as applicable, a liquidating settlement account or segregated liquidating settlement account. Losses are generally satisfied first from the margin deposited by the defaulting clearing member subject to exceptions designed to ensure that margin securing obligations of clearing member customer accounts is only used to satisfy the obligations in those accounts, and to take into account cross-margining arrangements between OCC and other clearing organizations.

After the application of margin deposits, any remaining losses are next charged against the Clearing Fund contribution of the defaulting clearing member. Assuming the margin deposits of the defaulting clearing member and its share of the Clearing Fund are not sufficient to cover the loss, and the clearing member does not satisfy a demand by OCC to pay the unsatisfied amount, the remaining deficiency shall be first funded by OCC's ~~Minimum Corporate Contribution and current and retained earnings that are liquid net assets funded by equity greater than 110% of the target capital level established by OCC's Board above the Early Warning~~; and next proportionately charged against the remaining clearing members' Clearing Fund contributions and the EDCP Unvested Balance, with the allocation determined in accordance with OCC Rule 1006(b)(ii). OCC may also borrow funds to meet obligations arising out of the default and may use the assets in the Clearing Fund to secure any such borrowings. However, if such loan remains outstanding for 30 days OCC considers the amount of Clearing Fund assets used to support OCC's obligations under the outstanding transaction as an actual loss to the Clearing Fund and immediately allocates the loss in accordance with OCC Rule 1006 (Purpose and Use of Clearing Fund).

To manage the failure of a bank or other clearing organization to perform, OCC may also use any cash, convert Clearing Fund deposits of non-defaulting members, or effect borrowing or other transactions using such deposits in order to obtain funds. In lieu of charging a loss or deficiency proportionately to the Clearing Fund computed contributions of non-defaulting members, OCC may elect to charge such loss or deficiency in whole or in part to OCC's ~~current earnings or retained earnings liquid net assets funded above the Early Warning~~. However, OCC is not permitted to do so to the extent ~~retained earnings liquid net assets funded by equity~~ are dedicated to complying with the liquid net assets requirement in SEC Rule 17Ad- 22(e)(15). If a charge is made against ~~retained earnings liquid net assets funded by equity~~, it is considered a refund of clearing fees to the non-defaulting clearing members to whose Clearing Fund contributions the loss or deficiency would otherwise have been charged.





Following the allocation of losses against the Clearing Fund contributions of the non-defaulting members, the non-defaulting clearing members must replenish the Clearing Fund by making deposits in the amounts charged to them. These may exceed their Clearing Fund contributions; however, a non-defaulting clearing member's aggregate liability for replenishing the Clearing Fund is capped at 200% of its then-required contribution during a 15-day "cooling-off period" that is triggered when OCC assesses a proportionate charge against the Clearing Fund. If a clearing member notifies OCC that it is withdrawing as a clearing member during the cooling-off period and meets the conditions specified in OCC's By-Laws and Rules, the clearing member would not be liable for replenishing the Clearing Fund immediately following the expiration of the cooling-off period. After a cooling-off period has ended, events described in OCC's By-Laws and Rules that result in a proportionate charge against the Clearing Fund would trigger a new cooling-off period.³⁸

Key Consideration 2

An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

In addition to the provisions of OCC's By-Laws and Rulebook that address the management of a clearing member default, OCC also has a Default Management Policy that is maintained by OCC's Financial Risk Management department. The purpose of the policy is to ensure that OCC can continue to meet its obligations in the event of a clearing member default, to describe the sequencing and use of financial resources to manage a default in a way that minimizes losses to OCC and minimizes systemic risk to other members and key market participants, and to ensure that OCC is well prepared to implement its default rules and procedures through annual testing involving its participants and other stakeholders.

OCC prepares an annual recommended testing plan based upon input from departments across OCC with guidance and approval from OCC's Management Committee. The plan specifies elements for testing such as scenarios including accessing liquidity facilities, simulated liquidation of various products and accounts across a diverse set of both actual and hypothetical portfolios, and systems to be tested along with recommendations for internal and/or external involvement. OCC staff coordinates and executes the approved plan and provides OCC's Management Committee with a summary of the results. OCC's management and other designated staff members meet as necessary to review the close-out process, evaluate lessons learned and target areas for improvement or change.

³⁸ A comprehensive "waterfall" of the financial resources OCC may use to manage a clearing member default is contained in OCC's response to Principle 4, Key Consideration 7.



Key Consideration 3:	<p>An FMI should publicly disclose key aspects of its default rules and procedures.</p> <p>OCC’s default rules and procedures are publicly available on OCC’s website. In addition, OCC’s website provides an overview of OCC’s default rules and procedures that cross-references operative provisions of the rules and describes the sequence of events involved with the suspension of a clearing member and the “waterfall” of financial resources available to satisfy OCC’s obligations with respect to guaranteed settlement.</p>
Key Consideration 4:	<p>An FMI should involve its participants and other stakeholders in the testing and review of the FMI’s default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.</p> <p>As part of the execution of the approved testing plan, OCC involves certain clearing members and participants in the clearing facilities of OCC in the testing and review of its default procedures, including with respect to acting as liquidation agents, auction participants and credit providers. Under OCC’s Rules, OCC periodically requires designated clearing members to participate in default management testing. OCC uses key factors to select designees that OCC reasonably determines are, taken as a whole, the minimum necessary for the maintenance of fair and orderly markets, the promotion of robust risk management, the support of stability of the broader financial system and the protection investors and the public interest. In addition to helping to ensure that OCC is well prepared to implement its default management plans, these drills provide OCC clearing members and other participants that are involved with opportunities to gain practical familiarity with OCC’s default rules and procedures and to provide meaningful feedback on simulated events.</p>

**Principle 14: SEGREGATION AND PORTABILITY;
SEC Rule 17Ad-22(e)(14)**

A CCP should have rules and procedures that enable the segregation and portability of positions of a participant’s customers and the collateral provided to the CCP with respect to those positions.

SEC Rule 17Ad-22(e)(14) applies to a covered clearing agency that is either a security-based swap clearing agency or a complex risk profile clearing agency. The rule requires such a covered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to enable the segregation and portability of positions of a member’s customers and the collateral provided to the covered clearing agency with respect to those positions, and effectively protect such positions and related collateral from the default or insolvency of that member.³⁹

**Key
Consideration 1**

A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant’s customer’s positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.

Regarding OCC’s SEC-regulated clearing activities, the primary relevant rules are the SEC’s customer protection rule, Rule 15c3-3 and its hypothecation rules, Rules 8c-1 and 15c2-1. Rule 15c3-3 requires that broker-dealers (i) maintain possession and control of certain customer securities, free of any liens and (ii) deposit in a special reserve bank account for the benefit of customers cash or certain short-term securities in an amount determined by a formula intended to reflect the net cash obligation of the broker to its customers. Rules 8c-1 and 15c2-1 impose additional requirements with regard to securities against which borrowing is permitted. These rules, among other things, require that any lien created in connection with borrowings against customer securities be separate from any lien created in connection with borrowings against proprietary securities. The rules also generally limit the amount that a broker-dealer may borrow against customer securities to the total amount owed to the broker-dealer by all customers. While the above rules do not apply directly to OCC, OCC’s rules are designed to permit registered U.S. broker-dealers who are OCC clearing members to remain in compliance with these rules.

Regarding CFTC-regulated futures accounts, Section 4d of the Commodity Exchange Act provides that the segregated funds of futures customers may be commingled and used by a DCO in connection with the trades of futures

³⁹ By its terms, SEC Rule 17Ad-22(e)(14) does not apply to OCC, since OCC is not a security-based swap clearing agency or a complex risk profile clearing agency.



and options customers but prohibits such funds from being commingled with other funds or used for any other purposes.

Public customer securities accounts are protected by SIPC, which insures individual customer accounts up to \$500,000. SIPC protection also extends to security futures positions carried in customer securities accounts.

Futures positions that are not carried in a securities account are not afforded SIPC protection; however, if carried in a segregated futures account they are protected under the segregated funds regulations of the CFTC.

OCC's rules are designed to achieve the segregation of customer property in accordance with the laws and regulations referenced above, whether directly applicable to OCC, as in the case of the segregation provisions of the Commodity Exchange Act and CFTC regulations thereunder, or that are directly applicable to OCC's clearing members, as in the case of the segregation provisions of the Securities Exchange Act and SEC regulations thereunder.

**Key
Consideration 2**

A CCP should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual accounts or in omnibus customer accounts.

Article VI, Section 3 of OCC's By-Laws (Maintenance of Accounts) sets forth the various types of accounts that clearing members may maintain. A segregated futures account and a segregated futures professional account are each limited to trades in futures and other commodity interests subject to the jurisdiction of the CFTC. OCC has a lien on the assets in each of these accounts. However, the lien is restricted in the sense that it serves as security for the obligations of the clearing member only in respect of those accounts. The assets in the account may not, for example, be used to satisfy obligations arising in the clearing member's proprietary account.

The provisions of Article VI, Section 3 describing these accounts specifically provide that OCC will comply with the CFTC's regulations with regard to segregation.

Article VI, Section 3 also provides for a "customers' account," which is limited to trades of a clearing member's securities customers. OCC has a lien on the securities, funds, and other property in the customers' account, but the lien is restricted in the sense that it only secures obligations arising out of that account. In addition, the lien does not extend to "segregated" long positions, which are long positions in options identified as segregated on OCC's books and records and with respect to which OCC therefore does not maintain a lien.

Chapter XI of OCC's Rules (Delivery of Underlying Securities and Payment) governs the suspension of a clearing member and the liquidation of the assets in the clearing members' accounts with OCC. These rules are

designed to preserve the segregation of customer property established under the provisions referenced above in the event of the suspension of a clearing member. OCC Rule 1104(a) (Creation of Liquidating Settlement Account) provides that cash derived from margin deposited in segregated futures accounts may not be commingled with any other cash and may be applied only to the obligations of the segregated futures accounts. In connection with the suspension of a clearing member, OCC creates a liquidating settlement account into which the funds obtained from the liquidation of property in a suspended clearing member's account(s) are deposited. However, OCC Rule 1104(a) expressly provides that funds held in or payable to a segregated futures account, and proceeds of segregated long positions, are not deposited in the liquidating settlement account.

Funds held in or payable to segregated futures accounts are deposited in a segregated liquidating settlement account and are thereby kept separate from other property in the clearing member's accounts. OCC Rule 1104(a) further provides that if the proceeds derived from liquidation of all assets attributable to a restricted lien account, such as the customers' account or segregated futures accounts, exceed the amount withdrawn by OCC from the liquidating settlement account or the segregated liquidating settlement account, as applicable, to satisfy obligations of, or reimburse OCC for losses arising out of, the relevant account, the excess will be disbursed by OCC to the clearing member or its representative for distribution to the persons entitled thereto.

OCC rules governing pending transactions further preserve the segregation of customer property. OCC Rule 1105(a) (Pending Transactions and Variation Payments) provides that premiums on closing sale transactions in securities cleared by OCC that close out segregated long positions in the customers' account will be deposited in a customers' settlement account "for distribution to the persons entitled thereto in accordance with applicable law." OCC Rule 1105(g) similarly provides that variation payments received on positions or transactions in futures in a segregated futures account will be credited to the segregated liquidating settlement account.

**Key
Consideration 3:**

A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.

OCC's segregated account structure helps promote the likelihood that positions and collateral of customers of a defaulting clearing member would be able to be identified and transferred to other clearing members in the event of a clearing member default. Under OCC's segregation framework for securities accounts, however, transfer of positions and collateral may in certain cases be inconsistent with competing policies and regulations of U.S. regulators and liquidation authorities (such as SIPC) that instead promote liquidation to return assets to customers of clearing members rather than facilitating direct transfer. For example, if a failed clearing



member is liquidated in a formal proceeding under the Securities Investor Protection Act, the customer securities and cash would be isolated under OCC's account structure and therefore would be readily identifiable as "customer property" that would be available for distribution to customers ahead of other creditors.

Key Consideration 4:

A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customer's positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant's customers' positions and related collateral.

OCC's rules and procedures related to segregation and portability of a clearing member's customer positions and related collateral are publicly disclosed through publication of OCC's Rulebook on its website. As described, these rules are designed: (i) to be compliant with the segregation requirements applicable to OCC under the Commodity Exchange Act as a DCO, and (ii) to facilitate compliance by broker-dealer clearing members with their customer protection obligations under the SEA with respect to OCC's activities as a registered clearing agency. Customer collateral is protected on an omnibus basis. Furthermore, and as noted above, OCC's transfer of positions and collateral may in certain cases be legally constrained by competing policies and regulations of U.S. regulators and liquidation authorities (such as SIPC) that instead promote liquidation to return assets to customers of clearing members rather than facilitating direct transfer. Such entities are empowered by law to direct certain of OCC's activities in the event of a clearing member's insolvency and may instruct OCC to liquidate positions and related collateral rather than port them.

**Principle 15: GENERAL BUSINESS RISK;
SEC Rule 17Ad-22(e)(15)**

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialize.

Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

SEC Rule 17Ad-22(e)(15) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that OCC can continue operations and services as a going concern if those losses materialize.

**Key
Consideration 1**

An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

As part of its risk management framework, the development of which is discussed in greater detail above under Principle 3, OCC has identified the following potential sources of general business or strategic risk:

- **New Business Risk:** OCC’s new products or services may have unintentional negative effects on OCC or OCC’s key stakeholders. This can include exceeding OCC’s resource capacity or a disruption of current operations.
- **Market Environment Risk:** OCC may be negatively affected by external environment factors such as changes in the competitive landscape, general financial market changes and government actions.
- **Systemic Risk:** Financial system instability could negatively affect OCC due to the interdependence of entities in the financial system and the risk the failure of OCC would pose to the financial system.
- **Vision and Planning Risk:** OCC may be negatively affected by a failure to articulate and communicate a strategic vision, as well as various communication, direction and execution errors in the identification, evaluation and selection of strategic alternatives to effectively direct and manage the achievement of strategic objectives.
- **Governance Risk:** OCC may be negatively affected if its governance process and framework for monitoring and controlling its business, along with its attempts to establish an environment that encourages integrity and ethical behavior, prove inadequate.

OCC manages the above risks through its strategic planning process, whereby OCC’s strategic vision, goals and objectives and project plans are reviewed annually and discussed monthly by OCC’s management.



Also, as discussed in greater detail under Principle 17, OCC utilizes a Risk Control Self-Assessment process, whereby OCC's staff identifies specific risks in OCC's business operations.

Additionally, to manage new business risk OCC requires the preparation of a new business impact assessment, analyzing all known risks associated with the new business and how it fits within OCC's existing models and risk management systems. OCC utilizes these impact assessments to determine the new business fit within OCC's existing risk appetite framework and to ensure that all risks are identified, monitored, and reported. OCC may adjust components of its risk management framework to address the risks presented by the new business. OCC also reviews the impact assessment against the compliance risk assessment framework. No new business is approved without first reviewing these assessments and concluding that the initiative can be properly managed, controlled and processed.

OCC also manages financial risks through an annual budget process and monthly budget reviews. In addition, OCC performs a monthly analysis of projected financial resources compared to its projected operating expenses, and the Board reviews the schedule of fees on a quarterly basis to determine whether changes need to be made to: (i) ensure revenue derived from clearing fees is sufficient to cover OCC's operating expenses, (ii) maintain reserves the Board deems reasonably necessary to provide facilities for the conduct of OCC's business and to conduct development and planning activities, and (iii) accumulate such additional surplus as the Board may deem advisable.

OCC has implemented processes to control and manage risks associated with the acquisition of hardware and software. These processes ensure that consistent standards are applied when justifying decisions to purchase, lease or license such assets. Additionally, OCC maintains a third-party risk management program that seeks to identify, mitigate and manage enterprise vendor risks, including financial viability and risks that could impact OCC's brand and reputation.

**Key
Consideration 2**

An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.

OCC complies with CFTC and SEC regulations regarding the maintenance of liquid net assets to cover business losses. OCC currently complies with CFTC Regulation 39.11(a)(2), which requires a DCO to hold an amount of financial resources that, at a minimum, exceeds the total amount that



would enable it to cover its operating costs for a period of at least one year, calculated on a rolling basis, and 39.11(e)(2), which requires that these financial resources include unencumbered, liquid financial assets – i.e., cash and/or highly liquid securities – equal to at least six months’ operating costs. OCC also complies with SEC Rule 17Ad-22(e)(15), which requires OCC to hold sufficient liquid net assets funded by equity equal to cover potential general business losses, including by holding liquid net assets funded by equity equal to the greater of either (i) six months of OCC’s current operating expenses or (ii) the amount determined by the Board to be sufficient to ensure a recovery or orderly wind-down of OCC’s critical operations and services.

Key Consideration 3:

An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.

As mentioned above, OCC holds liquid net assets funded by equity at least equal to the greater of either (i) six months of OCC’s current operating expenses or (ii) the amount determined by the Board to be sufficient to ensure a recovery or orderly wind-down of OCC’s critical operations and services. OCC also has a recovery and wind-down plan and estimates the cost associated with a recovery or orderly wind-down to help determine the amount of liquid net assets funded by equity that is required to be held by OCC to facilitate the recovery or orderly wind-down in the event that cost is greater than six months of OCC’s current operating expenses.

Key Consideration 4:

Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.

Financial resources held to cover general business risk are held in sufficiently liquid assets to cover its operating costs for a period of six months. These assets are held at custodial accounts as cash or government securities, invested in overnight repurchase agreements, which are highly liquid assets that can be converted into cash at little or no loss of value in adverse market conditions, pursuant to OCC’s Cash and Investment Management Policy, which is described in greater detail below under Key Consideration 4 to Principle 16. In addition, OCC maintains an unsecured, committed revolving credit facility that can provide OCC with access to additional liquidity for working capital and general corporate purposes. These resources are in addition to, and are kept separate from,

those resources that OCC holds to cover participant defaults or other risks covered by the financial resource principles, like the Clearing Fund and clearing member margin deposits.

Key Consideration 5:

An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.

OCC maintains a Capital Management Policy, which includes OCC's plan to replenish capital should OCC's equity fall below defined thresholds. On an annual basis, the Board approves a target capital level to ensure compliance with the SEC and CFTC regulations discussed above and to keep such additional amounts the Board may approve for capital expenditures. OCC monitors its level of equity and liquid net assets funded by equity on at least a monthly basis. If OCC's equity falls below the Early Warning (i.e., 110% of target capital), management would recommend to the Board whether to implement a fee increase in an amount necessary and appropriate to raise additional equity. If OCC's equity falls below 90% of its target capital at any time or below target capital for a period of 90 consecutive days, OCC would first contribute the EDCP Unvested Balance, and then if OCC's equity remained below 90% or if equity remained below target capital for an additional 90 consecutive days, OCC would charge clearing members an operational loss fee in equal shares. The operational loss fee would be in an amount to increase OCC's equity to ~~110% of its target capital~~ the Early Warning, up to the maximum operational loss fee identified in OCC's schedule of fees less any operational loss fees previously charged and not refunded. The maximum aggregate operational loss fee is set annually by the Board based on the amount determined by the Board to be sufficient to ensure a recovery or orderly wind-down of OCC's critical operations and services. The Board reviews and approves the Capital Management Policy on an annual basis.

**Principle 16: CUSTODY AND INVESTMENT RISKS;
SEC Rule 17Ad-22(e)(16)**

An FMI should safeguard its own and its participants' assets and minimize the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

SEC Rule 17Ad-22(e)(16) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to safeguard its own and its participants' assets and minimize the risk of loss and delay in access to these assets.

**Key
Consideration 1**

An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

OCC holds its own and its clearing members' assets at commercial banks in the U.S. and Canada, DTC, and the Federal Reserve Bank of Chicago. These entities are regulated institutions within their respective jurisdictions. All such banks are also required to meet the operational and financial standards set forth in OCC's policies and procedures. As set out in these policies and procedures, OCC only utilizes

U.S. or non-U.S. custodial and settlement banks that meet certain minimum Tier 1 Capital and capital ratio requirements, as well as other regulatory and credit standards. Before establishing a relationship with a bank, OCC also undertakes an operational and financial review of the bank, ascertaining the bank's capital adequacy per the Federal Reserve's Prompt Corrective Action framework.

OCC also regularly monitors the banks in which it deposits assets, by reviewing financial statements and checking for regulatory compliance. The purpose of this review is to ensure continued compliance with the high standards OCC expects from its settlement, escrow, and custodial banks, and to ensure that its own and its clearing members' assets are being properly protected. OCC's risk management program for the ongoing monitoring of banks is described in greater detail under Principle 9, Key Consideration 3.

Additionally, OCC complies with all applicable customer protection and segregation requirements with respect to the handling of customer funds, and maintains all of its working cash, as well as any clearing member cash that is not otherwise invested, exclusively in demand deposit accounts in order to minimize any delay in access to such cash.



Key Consideration 2	An FMI should have prompt access to its assets and the assets provided by participants, when required.
	As part of its initial approval and ongoing monitoring of the banks it uses, OCC structures each of the custody agreements it has entered into with a bank to ensure that OCC has the legal authority necessary for it to obtain prompt access to the assets held at the bank. To ensure prompt access, OCC also monitors each bank's timeliness of settlement approvals and any operational difficulties the bank might have with OCC's cash settlement systems. Additionally, OCC monitors the availability of the bank's systems for initiating wire transfers and performing real-time balance reporting.
Key Consideration 3:	An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.
	<p>As part of its procedures designed to manage custody and investment risk, OCC conducts annual reviews of each custodial bank, focusing on the bank's performance over the past year, as well as any system changes, fee increases or other changes that would affect OCC's relationship with the bank. OCC also monitors all banks' financial reports against its tiered surveillance structure. This process monitors the capital ratios, credit ratings and profitability, as well as other criteria and is designed to detect when a bank's financial condition is deteriorating and posing an increased credit risk to OCC. OCC may increase its surveillance of the bank relationship or place business restrictions on the use of the bank if conditions warrant. OCC staff also monitors general market news and events, as well as common stock and credit default swap prices, for any potential impact to its depositories.</p>
	<p>Generally, OCC keeps its working cash and securities in multiple banks to mitigate concentration risk. Additionally, OCC staff regularly monitors OCC's aggregate exposures to different banks and depositories and at least monthly reports these key exposures to OCC's management, including a breakdown by exposure type and cross-exposures (i.e., when a bank maintains multiple relationships or has affiliated clearing member relationships), as well as information regarding settlement activity and affiliated clearing member exposure levels. OCC also pays special attention to its aggregate exposure to certain banks that interact with OCC in multiple ways; e.g., when the same bank or an affiliate simultaneously serves as a custodian bank, an administrative agent for a credit facility, a lender and a clearing member.</p>

**Key
Consideration 4:**

An FMI’s investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.

OCC invests its assets in accordance with its policies and procedures that are designed to minimize OCC’s risk of loss or delay in accessing its assets. A brief description of these investment policies is included in OCC’s annual report, which is posted on OCC’s website and is available to clearing members and the public.⁴⁰ OCC sets these investment policies, and the Board, or an applicable Board committee, must approve any changes. Pursuant to these policies and procedures, OCC is currently permitted to invest its own and its clearing members’ cash in U.S. or Canadian government securities. This investment strategy emphasizes minimizing investment risks, including credit, market and liquidity risk. OCC does not commingle its own cash investments with its clearing members’ cash investments, and it complies with all customer protection and segregation regulations regarding the handling and investment of futures customer funds. Moreover, OCC only invests its own cash in instruments that pose minimal credit and liquidity risk, and only invests clearing member cash in overnight instruments. At this time, OCC does not make any investments with futures customer segregated funds.

OCC’s investment strategy currently focuses on the purchase of U.S. Government securities through the use of DvP repurchase agreements. This method of investment further reduces OCC’s investment risk because it controls the movement of OCC’s assets via a custodian bank. Such investments also permit quick liquidation with little adverse price effect. To minimize counterparty risk, OCC restricts its potential counterparties for these repurchase agreements to only financial institutions or FMUs that meet certain standards of size, capital adequacy, product offering and operational capability. OCC also requires the collateral delivered by the counterparty to be equal to 102% of the cash invested at the point of time the investment is made. This further protects OCC in the event the value of the collateral decreases while the investment is outstanding.

⁴⁰ <https://annualreport.theocc.com/>.

**Principle 17: OPERATIONAL RISK;
SEC Rule 17Ad-22(e)(17)**

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI’s obligations, including in the event of a wide-scale or major disruption.

SEC Rule 17Ad-22(e)(17) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to manage OCCs operational risk.

**Key
Consideration 1**

An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

Under OCC’s enterprise-level Risk Management Framework Policy described in Principle 3, OCC maintains policies and procedures to manage all forms of operational risk, including both process-related and IT-related operational risk.

Under the Risk Management Framework Policy, OCC defines operational risk as the risk of disruptions in OCC’s CCP services due to (i) deficiencies in internal controls, processes, or information systems; (ii) human error or misconduct; (iii) external events or intrusions; (iv) data security; and (v) IT systems reliability.

OCC manages operational risks in number of ways, including (i) an Enterprise Project Management Office that performs initial assessments of proposed projects and manages project execution, to ensure that proper oversight exists during the initiation, planning, execution and delivery of OCC enterprise projects; (ii) a Business Continuity Program to support continuance of critical services in the event of a catastrophic loss of infrastructure and/or staff (including a Crisis Management Plan, which outlines OCC’s processes for decision-making in crisis or emergency circumstances); (iii) a third party risk management program; (iv) training and development to ensure staff maintains and develops the necessary knowledge and skills to perform their jobs; and (v) training on business ethics and OCC’s Code of Conduct.

With regard to IT-related operational risks, OCC maintains (i) a Quality Standards Program, which includes targets that set performance standards for systems operations; (ii) a cybersecurity program; and (iii) a program to maintain system functionality and capacity. These are described further below.

<p>Key Consideration 2</p>	<p>An FMI’s board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI’s operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.</p> <p>The Board approves OCC’s Risk Management Framework Policy, which sets forth OCC’s approach to identifying, monitoring, and managing operational risk.</p>
<p>Key Consideration 3:</p>	<p>An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.</p> <p>OCC maintains clearly defined quality standards that outline performance expectations for operational reliability. OCC staff track system processes and performance for compliance with these standards and hold weekly meetings to review and discuss performance. OCC’s management is notified of any detected events that may affect compliance. The quality standards include:</p> <ul style="list-style-type: none"> • Minimum standards for data integrity; • Minimum standards for data timeliness; and • Minimum standards for system availability. <p>These quality standards are reviewed annually by OCC staff to ensure that all new systems or processes are captured.</p> <p>Additionally, OCC participates in annual industry business continuity/disaster recovery tests that include testing between OCC, participant exchanges, designated clearing members and other partners.</p>
<p>Key Consideration 4:</p>	<p>An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.</p> <p>In order to test the adequacy of its capacity to handle stress volumes while maintaining its quality standards, OCC performs high volume testing of its clearing systems; successfully processing a trade transaction volume, post-trade transaction volume and option series adds volume of at least 2.5 times high volume levels. Using transaction volume statistics, OCC annually determines its necessary capacity threshold and, to the extent its calculated capacity threshold exceeds the previously tested capacity, schedules such high volume tests.</p>
<p>Key Consideration 5:</p>	<p>An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.</p> <p>Physical Security</p> <p>OCC maintains the physical security of its offices by prohibiting unauthorized access. All persons on OCC’s premises are required to use</p>



an OCC Security Access Identification card, or a required visitors pass, to access doors. Additionally, OCC’s command and data centers are located in environments with multiple layers of security and that are monitored 24x7. Access to these facilities is restricted to authorized personnel, and an identification/access card and/or personal identification number are required to enter.

Information Security

OCC’s Information Security program includes a broad set of activities executed in support of the overall security posture of the organization, including mitigating activities for networks, systems, and information assets against internal or external threats and vulnerabilities (i.e., cyber threats). These activities include various measures in place to identify, protect, detect, respond, and recover from external threats and unauthorized or malicious internal user activities. This process area also includes management’s treatment of emerging technologies, vendors, and risks through formal risk assessment activities and implementation of mitigating controls.

All OCC employees receive information security awareness training to raise awareness of, and underscore the importance of adhering to, OCC’s Acceptable Use Policy, which covers the use of usernames and passwords and restrictions on the use of electronic messaging, software, and Internet access. OCC also maintains a Privacy Policy that sets forth best privacy practices with respect to personal information that may be required in order to authenticate users.

OCC also has a “clean desk” inspection program to monitor compliance with OCC’s Information Classification and Handling Policy, under which sensitive and confidential documentation must be stored safely in locked drawers, cabinets, and offices. The Information Classification and Handling Policy also provides specific instructions for the electronic and paper handling and storage of information generated by OCC.

Key Consideration 6:

An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.

Business Continuity

OCC has established a Business Continuity Program that defines the governance structure, high level roles and responsibilities, strategies. and

actions designed to minimize the impact of a business interruption, and to facilitate the swift return to normal levels of operation and service delivery.

The goal of OCC's Business Continuity Program is to support continuance of critical business processes in the event of an outage. OCC has defined an outage as the point in which systems, people and processes that deliver operations of daily processing, clearing, and settlement are not meeting the scheduled delivery time or standard as a result of any type of event that causes it. Upon declaration of the outage, OCC has set a recovery time objective of systems, people, and processes that deliver operations of daily processing, clearing, and settlement of two hours from the point of declared outage.

There are five primary phases within the Business Continuity Program that ensure the creation, implementation, and maintenance of the business continuity plans to meet the above goals. These phases represent the key steps within a continuous improvement lifecycle for business continuity:

- i. Business Impact Analysis and Risk Assessment
- ii. Determine Capabilities
- iii. Business Continuity, Crisis Communication, and Crisis Management Planning
- iv. Test, Training, and Exercise
- v. Plan Maintenance and Audit

OCC's Business Continuity Officer is responsible for the development, implementation, and maintenance of the business continuity plan to protect all business processes associated with OCC's critical clearance, settlement, and risk management services. OCC also has established a Crisis Management Team and a Cyber Incident Response Team for the purpose of coordinating recovery and response activities in response to a business disruptive event. It is the responsibility of all of OCC's management to assist in the development and support of OCC's Business Continuity Plan. All employees and contractors are responsible for understanding and being prepared to execute the plans for their area.

Business Continuity/Disaster Recovery Testing

OCC's Business Continuity Program mitigates risk through redundant infrastructure and regular testing of both business continuity plans and IT disaster recovery.

Given the nature and breadth of significant business disruptive events, OCC maintains a primary and an alternate data center in different regions within the U.S., separated by approximately 900 miles. Production processing is replicated between the primary and alternate sites sufficiently timed to ensure that there is no more than a five-minute variance in data.



As an additional safety measure, OCC maintains a secure data bunker with exact copies of core production data.

OCC data centers and the data bunker have emergency monitoring and backup systems, including fire detection and suppression systems, uninterruptable power supply, standby generators, and dual path telecommunications. Both data centers have sufficient capacity to process the entire core production workload and can function as production site within two hours.

Business Continuity/Disaster Recovery Tests and Exercises

OCC conducts internal business continuity testing and participates in industry-wide business continuity tests. Every year, OCC develops a business continuity/disaster recovery test plan focusing on high risk areas based on the risk and control self-assessment results, critical areas of system processing, significant changes to the infrastructure, and industry exercises for OCC participation (such as the annual Securities Industry and Financial Markets Association industry test). Pursuant to OCC Rule 218, OCC clearing members may be required to participate in business continuity/disaster recovery testing with OCC.

Education and Awareness

OCC conducts an average of fifteen business continuity/disaster recovery tests and exercises each year. In addition to the “hands on” business continuity/disaster recovery training accomplished through the tests and exercises, the Business Continuity Officer issues quarterly updates to all employees and contractors instructing them on business continuity plan best practices, health and safety practices, and/or changes to OCC’s business continuity plan program. Additionally, each department has a business continuity coordinator who conducts annual review and exercise or training sessions with their department staff.

OCC is actively involved in various working groups and public committees dedicated to business continuity/disaster recovery best practices, as well as various public-private partnerships, including ChicagoFIRST, the Financial Services Sector Coordinating Council and the Financial Services Information Sharing and Analysis Center.

Key Consideration 7:

An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.

As discussed under Principles 3, 4, 5, 6, 7, 15, 16, and 20, OCC has risk management policies in place designed to identify and address the risks it faces from its own clearing members, other FMUs, banks, and various service and utility providers. The occurrence of a business continuity event at a clearing member or one of OCC’s Stockholder Exchanges could

potentially disrupt OCC's operations. To this end, OCC conducts coordinated testing of its own business continuity and disaster recovery plans with those of its exchanges and the clearing member firms making up the top 80% of trading volume, which must include no fewer than ten clearing member entities. Additionally, OCC expects all of its clearing members, exchanges, and key vendors to maintain their own business continuity plans. OCC also maintains a third-party risk management team, which assesses the risks presented by OCC's various service providers.

As discussed in greater detail under Principle 20, OCC is cognizant of the risks presented by, and that it presents to, linked FMUs. These risks are managed, in part, by the contractual agreements governing the particular link arrangement.

**Principle 18: ACCESS AND PARTICIPATION REQUIREMENTS;
SEC Rule 17Ad-22(e)(18)**

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

SEC Rule 17Ad-22(e)(18) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to establish objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access by direct and, where relevant, indirect participants and other FMUs.

**Key
Consideration 1**

An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

OCC's participation requirements are outlined in Article V, Section I of OCC's By-Laws (Qualifications) and Chapters II (Miscellaneous Requirements) and III (Financial Requirements) of the Rules. These requirements are objective measures designed to ensure that participants are able to meet their obligations, without creating overly restrictive access requirements.

To initially qualify for membership, an applicant must be a broker-dealer registered with the SEC or an FCM registered with the CFTC, or a non-U.S. securities firm. An applicant must also meet specified minimum net capital requirements. For example, the initial minimum net capital requirement is \$2,500,000 for SEC-registered broker-dealers or CFTC-registered FCMs. The only non-U.S. securities firms currently eligible for OCC membership are Canadian firms; to initially qualify for clearing membership any such firm must maintain an "early warning reserve," computed in accordance with International Financial Reporting Standards, of \$2.5 million. To qualify for membership, clearing members must satisfy certain other requirements relating to operational capabilities and experience and qualifications of clearing operations personnel.

Each applicant is also required to submit specified documentation, including OCC's Pre-Qualification Online Application and audited financial statements. OCC conducts a pre-membership examination, which involves an examination of the firm's books and records, including the relevant financial statements, certain SEC and CFTC regulatory filings and net capital calculations, if applicable, and any business continuity plans and facilities management agreements, as well as interviews with the firm's principals.

Information from a prospective clearing member's application and pre-membership examination, along with information from the applicant's designated examining authority, is submitted to the Risk Committee. Final approval of an applicant requires approval either by the Risk Committee or a delegate pursuant to Article V, Section 2(b) of the By-Laws. This initial



application process is intended to ensure that only applicants that have a stable financial condition and operational infrastructure are admitted as OCC members, while providing fair access through objective criteria.

Key Consideration 2

An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavor to set requirements that have the least-restrictive impact on access that circumstances permit.

As noted above, OCC's participation requirements are outlined in OCC's By-Laws and Rules, which are made publicly available on OCC's website. Further, a clear summary of these requirements is publicly available on OCC's website.⁴¹ The participation requirements focus on financial stability and operational capability, and therefore are closely tied to OCC's goals of clearing transactions safely and efficiently.

OCC's Risk Committee annually reviews the access and participation criteria. In reviewing such criteria, the Risk Committee seeks to balance the need to ensure the creditworthiness of an applicant versus providing broad and equal access to the clearance and settlement services offered by OCC.

OCC's access and participation requirements not only are risk-based, but also are designed to meet OCC's requirements under applicable laws or regulations, including rules applicable to OCC as a covered clearing agency under SEC rules and a DCO under CFTC rules.

Key Consideration 3:

An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.

Once clearing members are admitted, OCC monitors their ongoing creditworthiness. For example, pursuant to OCC's Rules, each clearing member is required to file monthly financial statements with OCC. The clearing member's financial condition is then evaluated in relation to predefined standards, which are also reviewed annually by the Risk Committee. Clearing members are also required to submit annual audited financial statements to OCC staff. These measures ensure that OCC's clearing members have the financial resources necessary for safe and effective clearing operations.

To effectively monitor members with a deteriorating financial condition, OCC has a financial reporting requirement known as an "early warning" notice, which requires clearing members to promptly notify OCC of certain

⁴¹ <https://www.theocc.com/Company-Information/Becoming-a-Clearing-Member>.

material adverse changes in financial condition, such as a decline in net capital below a specified threshold or increase in aggregate indebtedness above a specified threshold.

OCC Rules provide for increased surveillance of members with deteriorating financial condition through a variety of automated systems employed by OCC's risk management staff. These automated systems are based upon general market conditions and the clearing member's exposure to market risk. First, OCC identifies those clearing members whose financial or operational condition have deteriorated over time by analyzing the trends in key financial ratios evidenced in monthly financial statements. Then, OCC identifies clearing members whose uncollateralized position risk exposures relative to capital prove excessive. If necessary, OCC may then take corrective action with respect to these members in the form of higher margin requirements, reductions in the clearing members' positions, increased capital, or some combination of these actions.

OCC maintains the effectiveness of its access and participation requirements through a clearly established suspension procedure. Suspensions are governed by Chapter XI of OCC's Rules (Suspension of a Clearing Member). The Rules are publicly available on OCC's website.

Further, an outline of events that can lead to suspension of a clearing member, as well as the suspension procedure, is publicly available on OCC's website.⁴²

OCC Rules provide clear events that may lead to the suspension of a member who no longer meets OCC's membership criteria. These objective criteria are based upon the financial or operational deterioration of the clearing member. The Board or certain designated officers may summarily suspend any clearing member that:

- Has been and is expelled or suspended from any self-regulatory or other regulatory organization;
- Fails, either directly or through its designated agent, to make timely delivery of cash, securities or other property to OCC as required by OCC Rules;
- Fails to make any delivery of funds or securities to another clearing member required pursuant to OCC Rules;

⁴² <https://www.theocc.com/Risk-Management/Default-Rules-and-Procedures>.

- Is in such financial or operational difficulty that the Board or certain designated officers determines and so notify the appropriate regulatory agency for such clearing member, or, in the case of a non-U.S. clearing member, the appropriate non-U.S. regulatory agency, and the SEC and CFTC, that suspension is necessary for the protection of OCC, other clearing members or the general public; or
- In the case of a non-U.S. clearing member, has been and is expelled or suspended by its non-U.S. regulatory agency or any securities exchange or clearing organization of which it is a member.

Pursuant to OCC Rules, OCC will notify the suspended clearing member, other clearing members, appropriate regulatory authorities, and applicable self-regulatory organizations when it has suspended a clearing member.

OCC's suspension procedure allows for fair review of OCC's decision. A suspended clearing member may request a written statement of the grounds for suspension and has the right to appeal its suspension as provided for in OCC Rule 1110 (Right of Appeal). In the event a clearing member appeals its suspension, the procedures specified in OCC Rule 1110, which require written notice of appeal within a specified timeframe, must be followed.

Upon receipt of a written notice from a clearing member requesting appeal of a suspension determination, OCC must process and record the appeal as provided for in its procedures. This will include convening an appointed review panel and providing the suspended clearing member with the opportunity to be heard within the time periods specified in OCC Rule 1110. OCC will provide the suspended clearing member with written notice of the review panel's decision, and the decision is reviewable by the Board in accordance with OCC Rule 1110. By following this procedure, OCC ensures that the suspension of members is fair and orderly, and that all members are aware of the relevant procedures.

**Principle 19: TIERED PARTICIPATION ARRANGEMENTS;
SEC Rule 17Ad-22(e)(19)**

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

SEC Rule 17Ad-22(e)(19) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to identify, monitor, and manage the material risks to OCC arising from arrangements in which firms that are indirect participants in OCC rely on the services provided by direct participants in OCC to access the covered clearing agency's payment, clearing, or settlement facilities.

**Key
Consideration 1**

An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.

OCC does not currently maintain formal tiered participation or sponsored access arrangements. While OCC has a legally binding agreement with its clearing members, OCC has no legally binding agreements with the clearing members' underlying customers and non-clearing member affiliates. However, the customers and non-clearing member affiliates of OCC's clearing members may be indirect participants of OCC and may pose a risk to OCC if they experience losses significant enough to affect the financial condition of an OCC clearing member. Accordingly, OCC manages the risks presented by indirect participants through its membership standards, monitoring of clearing member positions, large trader reporting, and outreach to clearing members or clearing member applicant(s).

One of OCC's key risk management tools is simply having financially and operationally sound clearing members. OCC furthers this objective through its initial and ongoing clearing membership requirements, and its ongoing monitoring of clearing member operations and finances. OCC also requires that clearing members maintain robust risk management programs that, in addition to complying with other regulatory requirements, are designed to address the risks they present to OCC. As discussed above in Principle 18, OCC monitors its clearing members' ongoing compliance with certain membership requirements, many of which are aimed at ensuring the clearing member's ongoing financial and operational soundness.

Under CFTC Rule 39.13(h)(2), OCC has an obligation to obtain copies of all large trader reports that its clearing members are required to file with the CFTC. Pursuant to this requirement, OCC reviews daily large trader account information submitted by clearing members on CFTC Form 102.

After consolidating this data, OCC reviews the reports to determine the risk presented by each large trader's overall portfolio to all clearing members that carry accounts for that large trader. Each month, OCC reviews a summary of the prior two months' risk metrics broken down by large trader



account, as well as other information relevant to evaluating OCC’s larger risk management situation. Clearing members also submit large option position reporting (“LOPR”) data to OCC pursuant to FINRA Rule 2360(b)(5) and various exchange rules. OCC may review this data when analyzing risks arising from customers of clearing members.

OCC may conduct outreach through its annual questionnaire to clearing members, risk examinations, or through an event triggered by a clearing member reporting excessive exposure in a customers’ or non-proprietary market-makers’ account. In addition, OCC may seek information about tiered participation arrangements when performing due diligence on a clearing member applicant or a clearing member seeking approval for additional account types and/or to clear new products.

Key Consideration 2	<p>An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.</p> <p>OCC’s monitoring of clearing members’ ongoing compliance with certain membership requirements, discussed in Principle 18 and in Key Consideration 1, includes regular reviews of clearing member operations that provide OCC with a vantage point to observe and identify the material dependences that exist between these clearing members and their largest customers. These dependencies are further discussed in Key Consideration 3.</p>
Key Consideration 3:	<p>An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.</p> <p>As discussed in Key Consideration 1, OCC maintains procedures for large trader monitoring and analysis to detect those indirect participants who bring significant exposures to OCC and its clearing members. This information, combined with information OCC collects from its ongoing monitoring of clearing member finances and operations, allow it to monitor the proportion of activity attributable to certain large traders relative to the capacity of the direct participants through which they access OCC.</p> <p>Indirect participants with particularly large positions present credit risk to OCC because the failure of one of these indirect participants to meet its payment obligations might cause that indirect participant’s clearing member to default on its own obligations to OCC. Without proper risk controls, that clearing member’s default may then create a default “contagion” that spreads to the clearing member’s other customers, then to other clearing members with whom those customers have accounts. OCC maintains risk management processes designed to effectively manage such risks. First, as discussed under Principles 4, 5, and 6, OCC collects margin and</p>



maintains a Clearing Fund specifically to mitigate a clearing member default. Moreover, as discussed under Principle 13, upon a clearing member default, OCC's Rules permit OCC to suspend the defaulting clearing member and transfer customer accounts to another clearing member. OCC also properly segregates all customer accounts from a clearing member's proprietary accounts, in accordance with the applicable SEC and CFTC requirements, which further acts to protect a clearing member's customers from the default of the clearing member.

For clearing members that are securities brokers or FCMs, if one of their customers represents a disproportionately large share of the risk that the clearing member presents to OCC, the clearing member may be dependent on that customer meeting its payment obligations in order for the clearing member to meet its own payment obligations at OCC. OCC's regular review of its clearing member's operations, combined with the large trader monitoring procedures and other surveillance activities discussed above under Key Consideration 1, allows OCC to identify such material dependencies and to act to mitigate the resulting risks.

Key Consideration 4:	An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.
	As discussed under Key Considerations 2 and 3, OCC manages the credit risks presented by tiered participation arrangements through its margin, default management, clearing membership and large trader monitoring policies and procedures. These policies and procedures are subject to regular review and testing, as discussed in greater detail under Principles 6, 13, and 16.

**Principle 20: FMI LINKS;
SEC Rule 17Ad-22(e)(2)**

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

SEC Rule 17Ad-22(e)(20) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to identify, monitor, and manage risks related to any link with one or more other clearing agencies, FMUs, or trading markets.

**Key
Consideration 1**

Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

OCC maintains the following link arrangements with FMUs:

- **CME:** OCC has a cross-margining arrangement with CME allowing positions cleared at each clearing organization to be combined into a single portfolio for margin and settlement purposes. Clearing level margins are computed based on the combined positions maintained in the cross-margin accounts. This results in one margin requirement for the participant.
- **NSCC:** OCC maintains a link with NSCC to facilitate the settlement of physically settled stock options and stock futures. Under the NSCC Accord, when the option holder exercises a physically settled stock option at OCC, OCC reports the exercise to NSCC so that physical settlement can be carried out through NSCC. NSCC also performs a similar function in facilitating the settlement of physically settled stock futures that settle “regular way” under the NSCC Accord. NSCC also facilitates the settlement of physically settled sock futures for securities that do not settle “regular way” (e.g., those that settle on a T+1 basis), though this is outside the scope of the Accord.
- **DTC:** OCC maintains a link with DTC in order to facilitate the pledging of collateral to OCC and the clearing of securities financing transactions. OCC supports two stock loan programs: a Stock Loan/Hedge Program and a Market Loan Program. Under the Stock Loan/Hedge Program, clearing members enter into bilateral loan/borrow transactions that are submitted to DTC for settlement, with OCC subsequently processing and guaranteeing the cash mark-to-market payments between clearing members associated with the transaction. Under the Market Loan Program, transactions are first matched on the ECS alternative trading system and then passed to OCC for settlement via DTC.

OCC maintains the following link arrangements with exchanges that are qualified to participate with OCC pursuant to OCC's By-Laws and Rules, and with other non-exchange trading markets or trade sources that can send trades to OCC pursuant to OCC's By-Laws and Rules:

Options Exchanges

- BOX Options Exchange LLC
- Cboe BZX Options Exchange
(An options trading facility of Cboe BZX Exchange, Inc.)
- Cboe C2 Exchange, Inc.
- Cboe EDGX Options Exchange
(An options trading facility of Cboe EDGX Exchange, Inc.)
- Cboe Exchange, Inc.
- MIAX Emerald, LLC
(An options trading facility of Miami International Securities Exchange, LLC)
- MIAX Options Exchange
(An options trading facility of Miami International Securities Exchange, LLC)
- MIAX PEARL, LLC
- Nasdaq BX Options
(An options trading facility of Nasdaq BX, Inc.)
- Nasdaq GEMX
(An options trading facility of Nasdaq GEMX, LLC)
- Nasdaq ISE
(An options trading facility of Nasdaq ISE, LLC)
- Nasdaq MRX
(An options trading facility of Nasdaq MRX, LLC)
- Nasdaq Options Market
(An options trading facility of Nasdaq Options Market, LLC)
- Nasdaq PHLX LLC
(An options trading facility of Nasdaq PHLX, LLC)
- NYSE American Options
(An options trading facility of NYSE American, LLC)
- NYSE Arca Options
(An options trading facility of NYSE Arca, Inc.)

Futures Markets

- Cboe Futures Exchange, LLC
- Small Exchange, Inc.

Other Trading Markets or Trade Sources

- Automated Equity Finance Markets, Inc. (ECS)
- MarkitSERV Ltd.

Identifying Risks from Prospective Links

OCC analyzes new links pursuant to its policies and procedures. This entails a thorough review of the link's current business activities, financial and liquidity resources, risk management practices and operational performance, as well as an assessment of OCC's perceived direct and indirect risk exposures to the link and an evaluation of how the failure or disruption of the link's services would affect OCC and its clearing members.

Once the operational, financial and legal review of the proposed link is complete and has been reviewed by the appropriate members of OCC's management, the proposed link is presented to OCC's Credit and Liquidity Risk Working Group, which makes a recommendation to the Management Committee regarding approval of the link. The Management Committee then makes a recommendation to the Risk Committee, which makes a final recommendation to the Board.

Monitoring Ongoing Financial and Operational Risk from Links

OCC's Credit Risk Management department monitors links daily for operational issues and/or any news regarding material changes in their financial conditions, to ensure they are meeting the requirements of their respective agreements and for any direct or indirect risk exposures. The monitoring also includes:

- Monthly monitoring of OCC's direct and indirect exposures to a link and other related links on a consolidated basis, encompassing collateral exposure, margin offsets and settlement activity;
- Quarterly meetings with links to discuss relevant and emerging aspects of the relationships, such as operational incidents, default management practices, collateral acceptance, margin processes and/or membership issues; and
- Annual review of each link, including any operational processes and financial statements.

<p>Key Consideration 2</p>	<p>A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.</p> <p>Before entering into an arrangement with a link, OCC conducts legal analysis and due diligence, operational review, and regulatory review. This includes analysis of the legal basis for the arrangement and the effective legal framework under which it would be operated, including, as applicable, the need for any changes to OCC's rules.</p> <p>All of OCC's current link arrangements are with entities that are located within the jurisdiction of the United States and are subject to the laws and regulations therein.</p>
<p>Key Consideration 3:</p>	<p>Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.</p>
	<p>This Key Consideration is not applicable to OCC.</p>
<p>Key Consideration 4:</p>	<p>Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.</p>
	<p>This Key Consideration is not applicable to OCC.</p>
<p>Key Consideration 5:</p>	<p>An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.</p>
	<p>This Key Consideration is not applicable to OCC.</p>
<p>Key Consideration 6:</p>	<p>An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.</p>
	<p>This Key Consideration is not applicable to OCC.</p>

<p>Key Consideration 7:</p>	<p>Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.</p>
	<p>As discussed above under Key Consideration 1, OCC undertakes a thorough review of the direct and indirect risks to which OCC is exposed by any link, which includes a review of any “spill-over” credit risks presented by the default of the link. OCC also considers the impact of a failure by a link or an unexpected interruption in access to the link (e.g., due to a natural disaster or business continuity event) and anticipates what mitigating steps it will take if such an event were to occur. OCC includes link failure as a scenario in its stress test scenarios. OCC periodically considers the failure of any of OCC’s links and maintains action plans intended to support OCC’s decision-making process during such a crisis.</p>
<p>Key Consideration 8:</p>	<p>Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP’s ability to fulfil its obligations to its own participants at any time.</p>
	<p>As discussed above under Key Consideration 1, OCC continuously monitors its risk exposures presented by its link arrangements. For cross-margin links, for example, OCC quantifies the actual dollar amount of exposure related to the various risks arising from the settlements performed; e.g., the risk of a loss of settlement services, loss of access to clearing member collateral and loss of margin offsets. OCC assesses these risks and incorporates them into OCC’s stress tests when determining the adequacy of its own financial resources and the margin requirements imposed on clearing members participating in the link relationship. OCC and its links each rely on their own clearing or guaranty funds in the event of a default.</p> <p>All rules governing link arrangements are disclosed to clearing members through OCC’s rules, as well as through the agreements that clearing members enter into when becoming participants in the cross-margining links.</p>
<p>Key Consideration 9:</p>	<p>A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.</p>
	<p>This Key Consideration is not applicable to OCC.</p>

**Principle 21: EFFICIENCY AND EFFECTIVENESS;
SEC Rule 17Ad-22(e)(21)**

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

SEC Rule 17Ad-22(e)(21) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to ensure that it is efficient and effective in meeting the requirements of its participants and the markets it serves.

**Key
Consideration 1**

An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.

OCC is dedicated to promoting stability and market integrity through effective and efficient clearing, settlement, and risk management services. OCC manages sophisticated systems and processes to support clearing, settlement, and risk management. Its systems facilitate transaction processing, fulfillment of margin, and settlement obligations, and facilitate its participants' risk management. By providing a breadth of services and maintaining the highest standard of customer service and availability, OCC makes the clearing process efficient, reliable, and secure.

Clearing and Settlement Arrangements

OCC's clearing and settlement arrangements are established primarily through its By-Laws and Rules, as well as through agreements with clearing members, exchanges, trading markets/sources, settlement banks, and other financial market utilities, among other counterparties. Before OCC can change its By-Laws or Rules, as discussed in Principle 1, Key Consideration 2, OCC must file any such proposed changes with the SEC and the CFTC. As a SIFMU, OCC must also file advance notice of proposed changes to its rules, procedures, or operations that could materially affect the nature or level of risks presented by OCC. When developing these proposed changes, OCC seeks input from clearing members or other pertinent stakeholders (e.g., through the Clearing Member Roundtable discussed in Principle 2 and below) when it believes they may be significantly affected by the proposed change. In any event, OCC participants (and the public) have an opportunity to comment on the proposed change once filed with the appropriate regulators. This mechanism is designed to provide OCC participants with the opportunity to help OCC make its clearing and settlement arrangements efficient and effective in serving its participants' needs. Furthermore, OCC has bilaterally negotiated its clearing and settlement agreements with its counterparties (and/or the agreements are subject to OCC's proposed rule change/advance notice filing requirements under applicable law), and OCC is expected to adhere to the terms of these agreements.

As noted in Principle 2, Key Consideration 7, OCC sponsors a Clearing Member Roundtable that connects OCC with clearing members and exchanges to discuss industry and operational issues. The Roundtable meets three times per year, and is charged with (i) addressing the operational impact of exchange new products and technologies; (ii) addressing the operational impact of OCC new or enhanced clearing systems, services and technologies; (iii) driving industry change by identifying clearing member concerns and generating ideas for improving efficiency and reducing cost and risk; and (iv) identifying and addressing industry initiatives that may affect clearance procedures for options and futures.

In addition to its engagement with its membership, OCC and its officers monitor and participate in market developments through their involvement in numerous industry groups, providing OCC with insight into broader market issues both in the United States and internationally.

Operating Structure

As described further in Principle 2, OCC's Board oversees OCC's business strategies, including expansions of clearing and settlement services to new business lines and product types, to ensure they reflect the legitimate interests of relevant stakeholders and are consistent with the public interest. OCC's Board is comprised of directors representing OCC clearing members, participant exchanges, and the public.

Scope of Products

OCC clears products offered on securities exchanges and trading markets/sources that are OCC participants. Product offerings are driven by the exchange or market, though are also subject to the requirements of OCC's By-Laws, Rules, and applicable agreement(s), as well as OCC's legal requirements. Prior to accepting a new product for clearing, OCC analyzes the product for potential operational, risk management, technology, and legal concerns. This analysis determines what changes may be required for OCC to clear the new product, informs the timing of the new product's launch, and facilitates collaboration with the exchange or trading market.

Use of Technology

As noted in Principle 17, Key Consideration 1, OCC includes operational risk within its risk management framework, and considers operational risk to include data security. Pursuant to that framework, OCC maintains quality standards for data integrity, data timeliness, and system availability; this is further described in Principle 17, Key Consideration 3. OCC also maintains a strategic roadmap for its most significant technology systems. The roadmap contains prioritized strategic initiatives and considers interdependencies with various other initiatives and considerations. OCC updates this roadmap annually.

**Key
Consideration 2**

An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk- management expectations, and business priorities.

OCC has defined business goals and objectives, which are centered on certain overarching strategic statements set by OCC's management pursuant to the authority granted by the Board. These goals, objectives and strategic statements are honed through periodic comprehensive planning sessions. OCC's management holds monthly discussions and annual reviews of its goals, objectives, and strategic statements. OCC's corporate governance arrangements, which are described under Principle 2, are designed to ensure that these goals are pursued and are measurable and achievable.

OCC's main strategic statements are to:

- Enhance Resiliency;
- Promote Operational Excellence;
- Build a High-Performance Culture; and
- Foster Growth, Innovation and Thought Leadership.

For each of these strategic objectives, OCC has defined more specific goals aimed at providing short-term and long-term growth and efficiency. For example, with respect to promoting operational excellence, OCC's strategic goals are to:

- Ensure highly reliable and secure services;
- Maintain individual and collective accountability for financial results;
- Provide service levels that meet the diverse needs of market participants; and
- Gain efficiencies in productivity and automation.

For each goal, OCC sets measurable and achievable annual objectives. OCC also categorizes and tracks each of these corporate objectives. OCC regularly measures and reviews its strategic goals and objectives, as well as any specific projects developed to further them, to ensure that they are being met efficiently and effectively.

OCC also tracks systems and operational performance against established standards, or service levels, for all areas of clearing and settlement. These standards track the performance and timeliness of, effectively measuring the performance of the system and associated processes. Weekly, OCC management meets to review adherence with service levels, followed by a bimonthly review meeting to assess production accountability.

**Key
Consideration 3:**

An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

As described under Principle 2 above, OCC's Compensation and Performance Committee plays a key role in overseeing OCC's overall performance, including tracking the accomplishment of established corporate objectives and the efficiency and effectiveness of its delivery of clearance, settlement and other designated industry services to its clearing members. The Compensation and Performance Committee bases its assessments, in part, on the progress reports it receives from OCC's management. Service level performance is also a component in determining employee compensation.

OCC maintains policies that require it to monitor and review the efficiency and effectiveness of its (i) clearing and settlement arrangements that are part of its fundamental directive as a covered clearing agency under the Securities Exchange Act; (ii) operating structure, including risk management policies, procedures and systems; (iii) scope of products cleared, settled, or recorded; and (iv) use of technology and communication procedures through interactions with market participants, including but not limited to clearing firms, exchanges, end users, regulators, and internal stakeholders. OCC also periodically reviews its By-Laws and Rules and material agreements to identify potential legal or factual changes that may warrant updates.

OCC also monitors its performance by obtaining annual feedback from both clearing members and participant exchanges. An annual survey is distributed to all clearing members and exchanges to solicit feedback on OCC's performance, systems, and operations.

**Principle 22: COMMUNICATION PROCEDURES AND STANDARDS;
SEC Rule 17Ad-22(e)(22)**

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

SEC Rule 17Ad-22(e)(22) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to ensure that it uses, or at a minimum accommodates, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, and settlement.

**Key
Consideration 1**

An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

OCC uses internationally accepted communications standards for clearing and settlement. OCC uses FIXML for exchange-traded options and futures, as well as to communicate regulatory data to self-regulatory organizations on behalf of OCC’s clearing members. OCC uses FPML for over-the-counter contracts. In compliance with DTCC’s Universal Trade Captures Format, OCC sends security settlement data from exercise and assignment in FIX. OCC also communicates with DTC and certain banks via ISO and SWIFT for collateral deposit and withdrawal transactions.

Procedurally, OCC communicates through its data distribution system, which is a data service facility available for subscribers. Through the data distribution system, OCC distributes information pertaining to trades, post-trade information, positions, prices, and settlement activity. Furthermore, the data distribution system allows subscribers to receive certain information in real-time.

To assist subscribers in utilizing the data distribution system, OCC makes a number of reference guides available on its website. OCC’s Member Services Department is also available to field member inquiries regarding the data distribution system.

OCC participates in a number of industry groups to establish communications standards and procedures provided to exchanges, clearing members and other relevant market participants. These industry groups include:

- Securities Industry & Financial Markets Association (SIFMA);
- Futures Industry Association (FIA);
- Shared Market Information System (SHAMIS);
- FIX Protocol Limited (FPL);

- International Swaps and Derivatives Association, Inc. (ISDA); and
- World Federation of Exchanges (WFE).

By using internationally accepted standards and comprehensive communications and distribution procedures, as well as working with industry groups to establish and develop communications standards, OCC seeks to ensure effective communication to its members.

Principle 23: DISCLOSURE OF RULES, KEY PROCEDURES AND MARKET DATA; SEC Rule 17Ad-22(e)(23)

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

SEC Rule 17Ad-22(e)(23) requires OCC to establish, implement, maintain and enforce written policies and procedures reasonably designed to maintain clear and comprehensive rules and procedures that provide specific disclosures of rules, key procedures and market data.

Key Consideration 1

An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

OCC seeks to ensure that its Rules, which are publicly available on OCC’s website, are clear and cover all key OCC operations. OCC’s policies and procedures are integrated into the Rules. Among other topics, OCC Rules cover OCC procedures and operations, requirements for membership, financial requirements of clearing members, risk management and suspension procedures.

The process for amending OCC Rules is disclosed in the Rules, which are publicly available on OCC’s website. Under Article XI of OCC’s By-Laws (Amendment of the By-Laws and the Rules), the By-Laws may generally be amended by the affirmative vote of two-thirds of the Directors then in office. OCC Rules may be amended at any time by the Board. In addition, proposed rule changes are posted to OCC’s website.

Key Consideration 2

An FMI should disclose clear descriptions of the system’s design and operations, as well as the FMI’s and participants’ rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.

OCC’s Rules clearly specify the rights and obligations of each clearing member with respect to OCC’s system. For example, Chapter II of OCC’s Rules (Miscellaneous Requirements) address various requirements for all clearing members, including certain personnel requirements. Chapter III (Financial Requirements) expressly outlines financial requirements for members. The requirements for membership are also summarized on OCC’s website.⁴³ By providing a comprehensive set of rules addressing the requirements of all clearing members, OCC enables clearing members to assess the obligations and risks incurred by participating in OCC’s services.

⁴³ <https://www.theocc.com/Company-Information/Becoming-a-Clearing-Member>.



OCC discloses a description of its design and operations through publications available to its clearing members, including technical reference and connectivity documentation.⁴⁴ User manuals and guides are also available to clearing members and exchange staff via OCC's secure intranet.

Key Consideration 3:

An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.

OCC offers a number of educational tools and services to ensure that clearing members have a sufficient understanding of its Rules as well as the risks of OCC membership. As a qualification for membership, each firm must go through an Operations Orientation. This orientation addresses OCC procedures, OCC financial and operational services, and the clearance process for different option products.

OCC also enhances clearing members' understanding of OCC operations through robust member communication procedures. OCC provides a toll-free customer service phone number, staffed with knowledgeable representatives who are available to assist clearing members. OCC also communicates with members via email and through an electronic messaging radar alert system in ENCORE.

OCC pairs each clearing member with a designated Member Services representative. Each clearing member's Member Services representative is responsible for communicating key business information in a manner tailored to the clearing member's individual needs. Additionally, Member Services representatives conduct on-site orientation and training for members. For example, through OCC's visitation program, the Member Services representatives visit each assigned firm to discuss OCC updates and industry initiatives.

To further ensure that its Rules and key procedures are clear to clearing members and the public, OCC offers guidance through a variety of informational resources and services. For example, OCC offers a number of user manuals, handbooks, and disclosure documents to its clearing members. These publications are designed to keep clearing members apprised of OCC operations, including the specific risks associated with membership. OCC also publishes information memoranda, which cover a number of topics pertaining to OCC's operations and services, as well as updates on corporate actions or systems enhancements. These are distributed via email subscription lists and are posted on OCC's website.⁴⁵

⁴⁴ Information on Data Distribution Service and Inbound FIXML Reference is available on the following pages in OCC's website: <https://www.theocc.com/Clearance-and-Settlement/Data-Distribution-Service-Reference>; and <https://www.theocc.com/Clearance-and-Settlement/FIXML-Reference>.

⁴⁵ <https://infomemo.theocc.com/infomemo/search>.



On OCC’s public website, market participants and members of the general public are also able to sign up for “email alerts” on various topics, including: (i) daily volume, contract adjustments and important notices, (ii) market data updates, (iii) expiration notices, (iv) OCC new listings, (v) OCC press releases, (vi) OCC updates, (vii) updates to OCC’s risk-based haircut program, (viii) updates to the data distribution system guide; and, (ix) the OCC News online newsletter.⁴⁶ OCC also publishes an “OCC Membership Update” newsletter that is posted on the proprietary MyOCC intranet and disseminated via email to clearing members. The newsletter highlights system enhancements, upcoming changes, and important reminders. Finally, OCC offers training via webinars and webcasts to explain new processes and changes to existing systems, as well as to provide its clearing members with general “refresher” courses.

OCC also manages OIC, an industry resource that provides education to market participants about the benefits and risks of exchange-listed equity options. OIC hosts options webinars, seminars, videos and podcasts, distributes educational literature, maintains a website, and offers live help from options professionals. OIC is governed by an independent roundtable that is comprised of representatives from the participant exchanges, clearing member brokerage firms and OCC. Appropriate compliance and legal staff of the exchanges ensure that all OIC-produced information includes a balance of the benefits and risks of options.

Key Consideration 4:	An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.
	<p>OCC discloses the nature and purpose of its fee structure to clearing members through Article IX, Section 9 of the By-Laws (Fees). OCC discloses its fee schedule publicly on its website. This fee schedule covers membership fees, as well as clearing services fees and fees for ancillary services.⁴⁷ Member Services is made available to respond to inquiries regarding fees. OCC also discloses a description of its clearing and ancillary services on its website.⁴⁸</p> <p>When a change is made to OCC’s fee schedule, the new fee schedule is posted on OCC’s public website and an announcement of the change is communicated to clearing members through OCC’s intranet. A change to OCC’s fee schedule also requires regulatory rule change filings with the SEC and CFTC, which will be published on OCC’s website and in the Federal Register. OCC also disseminates information memoranda regarding the new fee information to representatives of all clearing members.</p>

⁴⁶ <https://www.theocc.com/Subscription-Center>.

⁴⁷ <https://www.theocc.com/Company-Information/Schedule-of-Fees>.

⁴⁸ <https://www.theocc.com/Clearance-and-Settlement/Clearing>.

Key Consideration 5:

An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.

OCC’s response to the CPSS-IOSCO disclosure framework for financial market infrastructures is available at <https://www.theocc.com/Risk-Management/PFMI-Disclosures>. OCC plans to update its response at least once every two years and following any material changes to its risk management infrastructure.

OCC regularly makes a number of data reports available on its website. For example, OCC posts daily, weekly, and monthly volume reports to its website, as well as position limit data and position limit data change reports. Data is also made available through information memoranda posted on OCC’s website and through email alerts.⁴⁹

Principle 24: DISCLOSURE OF MARKET DATA BY TRADE REPOSITORIES

A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

Principle 24 is not applicable to OCC.

⁴⁹ Comprehensive volume reports, in many formats, can be found at: <https://www.theocc.com/Market-Data/Market-Data-Reports/Volume-and-Open-Interest/Daily-Volume>; open interest reports can be found at: <https://www.theocc.com/Market-Data/Market-Data-Reports/Volume-and-Open-Interest/Open-Interest>; information memoranda can be found at: <https://infomemo.theocc.com/infomemo/search>; information regarding data sales can be found at: <https://www.theocc.com/Market-Data/Market-Data-Reports/Other-Market-Data-Info/Data-Sales>.; batch processing reports can be found at: <https://www.theocc.com/Market-Data/Market-Data-Reports/Other-Market-Data-Info/Batch-Processing>.; and one can sign up for email alerts at: <https://www.theocc.com/Subscription-Center>.



VI. LIST OF PUBLICLY AVAILABLE RESOURCES

Resources pertaining to OCC can be found at <https://www.theocc.com>. Hyperlinks to resources specifically referenced in this Disclosure Framework are below.

[Annual Reports](#)

[By-Laws and Rules](#)

[Becoming a Clearing Member](#)

[Board Charter and Board Committee Charters](#)

[Clearing Services](#)

[Cross Margin Programs](#)

[Data Distribution System Reference Guides](#)

[Default Rules and Procedures](#)

[Fee Schedule](#)

[Inbound FIXML Reference](#)

[Information Memo Search](#)

[Investor Education](#)

[Margin Methodology](#)

[Market Data](#)

[OCC Board of Directors](#)

[OCC Executives](#)

[Participant Exchanges & Futures Markets](#)

[PFMI Disclosures](#)

[Subscription Center](#)