

August 23, 2018

VIA EMAIL

Brent J. Fields, Secretary
U.S. Securities and Exchange Commission
100 F. Street, N.E.
Washington, D.C. 20549-1090

Re: Re-Approval of the OCC Capital Plan (File No. SR-OCC-2015-02)

Dear Mr. Fields,

In connection with the above-referenced proceeding, and further to our discussions with Staff, the Options Clearing Corporation (“OCC”) has retained Marc Brown, Global Valuation Services Practice Coordinator at AlixPartners, LLP (“AlixPartners”), to conduct an analysis of the reasonableness of the expected returns of the Stockholder Exchanges through their investment in OCC under the Capital Plan. A copy of Mr. Brown’s report of his findings (the “AlixPartners Report”) is annexed hereto as Exhibit A.

As discussed therein, the AlixPartners Report directly addresses the D.C. Circuit’s suggestion that, upon remand, the Commission engage in a “reasoned analysis” to determine “whether the Plan pays dividends to shareholder exchanges at a reasonable rate.” *Susquehanna International Group, LLP v. SEC*, 866 F.3d 442, 446-47 (D.C. Cir. 2017). Mr. Brown conducted a detailed financial analysis of the returns expected by the Stockholder Exchanges in exchange for their substantial illiquid investments and replenishment commitments under the Capital Plan, and concluded that those returns fall within a reasonable range for this investment and commitment.

Accordingly, in addition to the robust evidence that has previously been provided supporting the re-approval of the Capital Plan, the AlixPartners Report provides further substantiation that the dividends at issue in this matter are reasonable. For the Commission’s convenience, and to avoid any confusion about the contents of the administrative record, we have enclosed as Exhibit B a list identifying all

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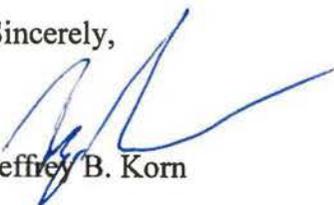
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documents and submissions that have been provided to the Commission during the course of these proceedings as well as the dates on which they were submitted.

These materials, consistent with the AlixPartners Report, demonstrate what the Commission has found three times already in approving the Capital Plan—the Capital Plan is designed to protect investors and the public interest, it does not impose any burden on competition, it is not designed to permit unfair discrimination among participants in the use of the clearing agency, and it complies with OCC's own bylaws. In short, the Capital Plan complies with all aspects of the Exchange Act and should be re-approved.

OCC has now devoted significant efforts to put into place and support throughout these proceedings a Capital Plan that satisfies all of the requirements of the Exchange Act and that is necessary to satisfy its obligations to the Commission, to the CFTC, and as a SIFMU. The record amply supports re-approval consistent with the D.C. Circuit's decision and the Commission's obligations under the Exchange Act. OCC respectfully requests that the Commission re-approve the Capital Plan for a fourth, and final, time.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jeffrey B. Korn', with a long horizontal flourish extending to the right.

Jeffrey B. Korn

Expert Report of Marc J. Brown
OCC Capital Plan Administrative Record

EXHIBIT A

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I. Introduction and Background

1. The Options Clearing Corporation (“OCC”) issues and clears U.S. exchange-listed options and futures on underlying financial assets including stocks and stock indices.¹ Its mission is to “promote stability and market integrity through effective and efficient clearance, settlement and risk management services while providing thought leadership and education to market participants and the public about the prudent use of products [it] clear[s].”² OCC provides central counterparty (“CCP”) clearing and settlement services to 18 exchanges and trading platforms and its clearing membership is comprised of more than 100 of the largest U.S. broker-dealers, U.S. futures commission merchants, and non-U.S. securities firms.³

2. OCC is owned equally by five exchanges: Chicago Board Options Exchange, Incorporated (“CBOE”), International Securities Exchange, LLC (“ISE”), NASDAQ OMX PHLX LLC (“NASDAQ OMX”), NYSE MKT LLC (“NYSE MKT”), and NYSE ARCA, INC. (“NYSE ARCA”, collectively, the “Stockholder Exchanges”).⁴ There are up to 20 Directors on the OCC Board of Directors (“OCC Board”). Those Directors are comprised of nine member Directors, five Stockholder Exchange Directors, five public Directors, and one Management Director.⁵

3. OCC operates under the jurisdiction of the Securities and Exchange Commission (the “SEC”) and the Commodity Futures Trading Commission (the “CFTC”), and it also operates

¹ OCC, 2017 Annual Report at 2.

² OCC, 2017 Annual Report at 1.

³ OCC, 2017 Annual Report at 2, 34.

⁴ OCC, 2017 Annual Report at 2; OCC, 2013 Annual Report at 2; Amended and Restated Stockholders Agreement, dated March 6, 2015, at 1.

⁵ Article III – Board Directors, OCC By-Laws.

under the “prudential regulation by the Board of Governors of the Federal Reserve System (the ‘Federal Reserve’) as a systematically important financial market utility (‘SIFMU’).”⁶

4. OCC was designated a SIFMU in July 2012 by the Financial Stability Oversight Counsel.⁷ As a SIFMU, OCC is “required to satisfy domestic and international standards (which continue to evolve) and specific regulatory requirements to ensure that, notwithstanding shocks to the financial markets and other business risks, it can continue to perform its central role in the options markets.”⁸

5. Due to OCC becoming designated as a SIFMU and in the face of pending regulatory capital rules on the near horizon, OCC began the process of evaluating its capital position in early 2014. This capital position assessment ultimately resulted in the OCC undertaking an additional capital raise.

6. In March 2014, the OCC Board formed an Ad Hoc Strategic Advisory Group (the “Advisory Group”) in order to “develop a Capital Plan that would, in addition to raising capital generally, satisfy the SEC’s proposed standards for covered clearing agencies in proposed SEC Rule 17Ad-22(e)(15) and [Bank of International Settlement’s Committee on Payment and

⁶ OCC, 2017 Annual Report at 34.

⁷ “On July 18 OCC received notice it has been designated as a systemically important Financial Market Utility (SIFMU) by the Financial Stability Oversight Council (FSOC) as part of the Dodd-Frank financial overhaul law.” (available at https://www.theocc.com/about/newsroom/releases/2012/07_19.jsp)

⁸ The Options Clearing Corporation’s Post-Remand Submission to the Commission in Support of the Re-Approval of the Capital Plan, October 13, 2017, at 3-4.

Settlement Systems (“CPSS”) and International Organization of Securities Commissions (“IOSCO”)] Principle No. 15 of the Principles for Financial Market Infrastructures.”^{9, 10, 11}

7. The Advisory Group hired Barclays Capital, Inc. (“Barclays”) and Oliver Wyman in June 2014 and August 2014, respectively, as external consultants to assist it in analyzing the amount of capital the OCC would need to raise to satisfy the expected regulations.¹² Ultimately, the consultants determined that OCC needed to bring the regulatory capital position to \$247 million and to obtain a replenishment capital commitment of up to potentially an additional \$200 million.¹³

8. After a number of alternatives were considered by the Advisory Group, the OCC Board was presented with two alternatives for raising this additional capital: (i) additional contributions from the Stockholder Exchanges or (ii) additional contribution funding through fee increases to clearing members and reducing refunds to clearing members in order to build up the capital base over time.¹⁴

9. After presenting the OCC Board with two alternative plans that the Advisory Board determined would satisfy the regulatory equity capital plan, the OCC Board chose the plan in which the Stockholder Exchanges agreed to contribute \$150 million collectively (or \$30 million

⁹ Declaration of Craig S. Donohue, October 13, 2017, ¶¶ 3,6.

¹⁰ According to the SEC final rule release announcement “Rule 17Ad-22(e)(15) would require a covered clearing agency to have policies and procedures that provide for holding liquid net assets funded by equity equal to at least six months of current operating expenses so that the covered clearing agency can continue operations during a recovery or wind-down. The rule also would require policies and procedures to maintain a viable plan – approved by the board of directors and updated at least annually – for raising additional equity should its equity fall close to or below the amount required.” (available at <https://www.sec.gov/news/pressrelease/2016-199.html>).

¹¹ Principle 15 “General Business Risk” states: “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 materiali[z]e. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.” CPSS-IOSCO, “Principles for financial market infrastructures,” April 2012, at 88.

¹² Declaration of Craig S. Donohue, October 13, 2017, ¶ 7.

¹³ Declaration of Craig S. Donohue, October 13, 2017, ¶¶ 8, 15.

¹⁴ Declaration of Craig S. Donohue, October 13, 2017, ¶ 10.

each), along with a commitment by the Stockholder Exchanges to provide potentially up to \$200 million in future capital (the “Replenishment Capital Commitment”).^{15, 16} Therefore, the increased funding would be sourced from a \$150 million capital infusion from the Stockholder Exchanges (the “Capital Contribution”) along with the existing \$97 million in equity and retained earnings already on OCC’s balance sheet.^{17, 18}

10. Under the terms of the agreements, in exchange for the Capital Contribution and the Replenishment Capital Commitment, the Stockholder Exchanges were to receive annual dividends (the “Dividends”). The Dividends were to be determined in the following manner: OCC’s clearing members would be provided a refund on fees paid of 50% of OCC’s earnings before tax and then the after-tax remainder would be issued as dividends to the Stockholder Exchanges.¹⁹ The Stockholder Exchanges and OCC entered into various agreements to effectuate the transaction at the end of February and the beginning of March 2015. For ease of use, I will refer to the transaction in which the Stockholder Exchanges made Capital Contributions and agreed to the Replenishment Capital Commitment in return for the Dividends above as the “Capital Plan.”

11. The Capital Plan was approved several times by the SEC.²⁰ However, in August 2017, the U.S. Court of Appeals for the District of Columbia Circuit remanded to the SEC and directed the SEC to reevaluate the Capital Plan.²¹

¹⁵ Declaration of Craig S. Donohue, October 13, 2017, ¶¶ 8-15. The Replenishment Capital is meant to address the part of Rule 17Ad-22(e)(15) that “...also would require policies and procedures to maintain a viable plan – approved by the board of directors and updated at least annually – for raising additional equity should its equity fall close to or below the amount required.” (available at <https://www.sec.gov/news/pressrelease/2016-199.html>).

¹⁶ I will refer to the capital contributed under the Replenishment Capital Commitment as the “Replenishment Capital.”

¹⁷ Declaration of Craig S. Donohue, October 13, 2017, ¶ 8.

¹⁸ The \$97 million was comprised of \$72 million in retained earnings in addition to the existing \$25 million in equity at the time.

¹⁹ *See, e.g.*, Declaration of Craig S. Donohue, October 13, 2017, ¶¶ 8-15, 17.

²⁰ The Options Clearing Corporation’s Post-Remand Submission to the Commission in Support of the Re-Approval of the Capital Plan, October 13, 2017, at 9-11.

²¹ The Options Clearing Corporation’s Post-Remand Submission to the Commission in Support of the Re-Approval of the Capital Plan, October 13, 2017, at 11-13.

12. I was retained by Willkie Farr & Gallagher LLP (“Counsel”) to assess the reasonableness of the expected returns of the Stockholder Exchanges through their investment in OCC under the Capital Plan contemporaneous with the implementation of the Capital Plan. Based upon my analyses that I detail later in this report, I conclude that the expected returns to the Stockholder Exchanges for their investment in OCC and the Replenishment Capital Commitment under the Capital Plan fall within a range of returns that is reasonable for this investment and commitment.

II. Qualifications

13. I am a Managing Director with AlixPartners, LLP (“AlixPartners”), a financial and operational consulting firm with over 1,700 employees located in 25 offices worldwide. I focus on providing financial and valuation advisory services and am AlixPartners’ Global Valuation Services Practice Coordinator. I have more than 20 years of professional experience in financial analysis, with a primary focus on valuing private and public companies and related securities in a variety of contexts, including for mergers and acquisition and capital-raising transactions. I have significant experience in analyzing and valuing entities operating in the financial services industry.

14. I have extensive experience in valuing companies, assets and securities in connection with mergers and acquisitions, divestitures, strategic planning, capital raising, financial reporting, tax reporting and planning, bankruptcies, reorganizations and workout situations, ESOP transactions and annual valuation updates, as well as in litigation and other disputes. In addition to business enterprise valuations, I have valued debt instruments, warrants, options and other derivative securities, common and preferred stock as well as limited partner interests, intellectual property and intangible assets. I have substantial experience assessing investments in private companies. I have advised law firms, lenders, investors, government agencies and public and private companies of all sizes, both domestically and internationally.

15. I have been qualified as a valuation expert in federal and bankruptcy court and have provided buy-side and sell-side merger and acquisition advisory assistance and have also calculated and testified to damages for litigation, arbitration and mediation purposes. I have also advised companies and creditors operating in workout and in-court bankruptcy situations on a variety of financial and operational matters including performing valuation analyses, in both going-concern and liquidation contexts, as well as assessing solvency and credit worthiness.

16. Prior to joining AlixPartners, I was a Senior Analyst in the Valuation Services Group of Price Waterhouse, LLP and an Investment Banking Analyst at John Nuveen & Co. I also worked as an Investment Analyst at Chicago Fundamental Investment Partners, LLC, an investment fund where I valued public and private companies and specific subsidiaries of public companies, analyzed the market prices of debt, equity and derivative securities and made recommendations to buy or sell specific securities.

17. I have a Bachelor of Science in Finance (with high honors) from the University of Illinois at Urbana-Champaign and a Master of Business Administration (with honors) from the University of Chicago Graduate School of Business with concentrations in Accounting, Finance and Strategic Management. I am a CFA Charterholder and a member of the CFA Institute, as well as the CFA Society of Chicago, the American Bankruptcy Institute, and the Business Valuation Association. I have presented to diverse audiences on a variety of valuation and other financial topics.

18. The opinions presented in this report are based on my analyses of information provided in this matter, publicly available information and my experience, training, education and expertise as a financial and valuation consultant.

III. Summary of Opinion

As discussed below, the expected returns to the Stockholder Exchanges for their investment in OCC and the Replenishment Capital Commitment under the Capital Plan fall within a range of returns that is reasonable for this investment commitment.

IV. Financial Analysis

19. The Capital Plan was intended to raise additional regulatory capital to address proposed increased standards that were being contemplated by the SEC.²² OCC was restricted in the ways in which it could raise capital. First, as I understand it, the additional capital had to be in the form of equity.²³ Second, under OCC's governing documents, the Stockholder Exchanges could not be compelled to admit any new equity holders.²⁴ Therefore, as I understand it, the capital raise was limited to either internal funding or through the existing Stockholder Exchanges, unless those Stockholder Exchanges each agreed to allow additional equity holders.

20. According to OCC, on December 18, 2014, OCC's Board chose the Capital Plan over alternatives because the Capital Plan "would not increase upfront costs to clearing members and would also raise capital within the timeline OCC anticipated it would have to comply with the SEC's new regulation."²⁵ The Stockholder Exchanges, of course, wanted compensation for the Capital Contribution and the Replenishment Capital Commitment. As part of the negotiation process, the OCC and the Stockholder Exchanges agreed on the Dividends as the form of compensation and incentive for the Stockholder Exchanges to make this additional equity investment and agreed to the Replenishment Capital Commitment.²⁶

²² When the OCC decided to raise capital, the SEC rule was a proposed rule, not a final rule. *See, e.g.*, Declaration of Craig S. Donohue, October 13, 2017, ¶ 9.

²³ *See* Rule 17Ad-22(e)(15).

²⁴ Declaration of Craig S. Donohue, October 13, 2017, ¶ 23. *See also* Article VIIA – Equity Exchanges, OCC By-Laws and Amended and Restated Stockholders Agreement, March 6, 2015.

²⁵ Declaration of Craig S. Donohue, October 13, 2017, ¶¶ 13-14.

²⁶ Declaration of Craig S. Donohue, October 13, 2017, ¶¶ 15-18.

21. Barclays prepared several presentations for the Advisory Group, which ultimately resulted in a presentation to the OCC Board entitled “Project Optimal: Capital Plan Discussion Materials,” dated December 18, 2014 (the “Barclays Final Presentation”). The Barclays Final Presentation contained an analysis of the expected dividends that were supposed to flow to the Stockholder Exchanges in a slide entitled “Exchange Contribution – Exchange View.” Barclays estimated that the present value of the Dividends was worth between \$246.6 million and \$281.3 million.²⁷

Discount Rate

22. I sought to independently analyze the appropriate discount rate to apply to the projected Dividends as reported in the Barclays Final Presentation. Given the Stockholders Exchanges were being asked to permanently infuse regulatory equity capital into a private entity that was structured to be non-profit maximizing, I considered several benchmarks for assessing the reasonableness of the expected Stockholder Exchanges’ return.

23. Private equity investment often requires a premium. The Stockholder Exchanges’ investment in OCC shares certain characteristics of private equity investments, but it is a more illiquid, longer term investment than more typical private equity investments. According to an April 2015 paper based on a survey of private equity investors, these investors “typically target a 22% internal rate of return on their investments on average (with the vast majority of target rates of return between 20 and 25%).”²⁸ The *ex ante* rates of return that private-equity-backed investors require are based, in part, on the risk and the illiquidity of the investments. If anything, some of the features of the investment in OCC are less attractive than a typical private equity investment,

²⁷ Barclays Final Presentation at 9. For purposes of my analysis, I accept the discrete annual Dividends projected in the Barclays Final Presentation.

²⁸ Gompers, Paul, Steven N. Kaplan, Vladimir Mukharlyamov, “What Do Private Equity Firms Say They Do?” *Harvard Business School*, Working Paper 15-081, April 15, 2015, at 3.

implying that a greater premium is warranted to attract the investment capital. Private equity investors look for an exit from their investment over a short-to-medium-term time horizon,²⁹ which the Stockholder Exchanges cannot hope to have given that the capital infusion is intended to be permanent capital and the restrictions on adding additional OCC shareholders.

24. In addition to assessing required private equity returns, I also looked at analyzing the Stockholder Exchanges' return using a more traditional valuation discount rate. The Capital Asset Pricing Model ("CAPM") is a common way to determine the cost of equity, which is the rate of return required by equity investors to invest in a particular business. I calculated an initial OCC cost of equity, prior to additional liquidity considerations as detailed later, by using the CAPM which begins with a risk-free rate, U.S. government Treasury bonds, and then adds risk premiums, which stockholders require to assume the additional risk of equity investment.

25. The formula for CAPM is expressed as follows:

$$\mathbf{K_e = R_f + B \times (R_m - R_f) + SSP + A}$$

where:

K_e = required rate of return on equity capital

R_f = risk-free rate of return (long-term government bonds)

B = beta or systematic risk of this type of equity investment

R_m = market return

SSP = small stock premium

A = alpha or unsystematic risk of the equity investment

²⁹ Gompers, Paul, Steven N. Kaplan, Vladimir Mukharlyamov, "What Do Private Equity Firms Say They Do?" *Harvard Business School*, Working Paper 15-081, April 15, 2015, at 14.

26. I used the yield on a twenty-year U.S. Treasury bond to estimate the risk-free rate of return.³⁰ This interest rate as of December 18, 2014 was 2.54%.³¹

27. Due to the increased risk of holding equity securities as compared to holding debt securities, investors demand a risk premium as part of their return on equity capital. This risk premium is defined as the difference between the market return on equity and the risk-free rate of return. The equity risk premium is composed of two components: a risk premium for investments in large companies, and an additional risk premium for the increased riskiness of smaller capitalization companies. Based on data from the 2014 Duff & Phelps Cost of Capital Yearbook, the baseline risk premium for large companies is 6.18%, to which an additional risk premium of 5.99% for small companies should be added under these circumstances.³²

28. The beta I used for my rate of return, 0.85, was based on the average beta of my guideline companies.³³ The guideline companies I selected are the following: CBOE Global Markets, Inc., CME Group, Inc., Intercontinental Exchange, Inc., and Nasdaq Inc. These are all financial services companies that have financial exchanges as part of their business, including options or futures exchanges. Except for CME Group, each of these guideline companies is a parent to at least one of the Stockholder Exchanges. CME Group also provides CCP services

³⁰ The use of the 20-year Treasury bond as the risk-free rate in a discount rate calculation is a standard valuation assumption and reflects that while a discounted cash flow analysis typically values a business into perpetuity, the present value of cash flows beyond 20 years is typically relatively small.

³¹ I chose December 18, 2014 as the date of evaluation because that is the date that the OCC Board voted on the Capital Plan.

³² OCC has an idiosyncratic risk profile as a non-profit-maximizing, private firm and, as such, does not generate revenue and profits like a more typical profit-maximizing firm. Therefore, I inferred an equity value based on Market-Value-of-Equity-to-Book-Value-of-Equity multiples for the four guideline public companies (CBOE Global Markets, Inc., CME Group, Inc., Intercontinental Exchange, Inc., and Nasdaq Inc.) and used the median multiple to develop an equity value for OCC. The resultant inferred market capitalization for OCC falls into the lowest (smallest) decile (10th) as reported in the Duff & Phelps 2014 Cost of Capital Yearbook.

³³ Guideline companies are companies that have similar risk and return profiles to the subject company and are often in the same or similar industry. These guideline companies are used to infer the cost of equity of the subject company and are also often used to infer the subject company's value.

among its service offerings. Inserting these assumptions into the CAPM results in a required rate of return on equity capital of 14.0% as of December 18, 2014.³⁴

29. It is important to note there are key differences between each of these companies and the OCC. Those differences are not limited to the OCC being a privately-held enterprise while the guideline companies are publicly traded. While these companies are regulated by the SEC and other regulators, these companies have a profit-maximizing fiduciary duty to their shareholders, while OCC does not have the same duty. Moreover, the guideline companies have more diverse income sources than OCC. In short, while these companies are useful for initial comparative purposes, OCC's profile would in fact imply that a greater risk premium is warranted along with a corresponding higher cost of capital for an investor to use infuse equity capital.

30. Accordingly, based on a 14.0% cost of equity, as a first step in evaluating the expected return of the Stockholder Exchanges, I have calculated that the present value of the Dividends when the Capital Plan was approved by OCC's Board was \$183.7 million.^{35, 36} As discussed below, this initial valuation figure needs to be adjusted due to the lack of marketability in the potential investment and to account for the Replenishment Capital Commitment.

Lack of Marketability

31. Another important risk facing the Stockholder Exchanges in connection with the Capital Contribution is that there is a severe lack of marketability for that investment. First, the Capital Contribution is regulatory capital and cannot be removed unless it is replaced by other equity regulatory capital. Moreover, the Stockholder Exchanges are constrained from selling their

³⁴ My estimate of OCC's cost of equity using CAPM would also be 14.0% on March 6, 2015, which was the initial date on which the SEC approved the Capital Plan and was also the date of the Amended and Restated Stockholders Agreement.

³⁵ I am basing my analysis on the Terminal Growth method in the Barclays Final Presentation.

³⁶ Because I am discounting dividends, I use the cost of equity as the hurdle rate.

positions in the OCC since potential purchasers are limited and OCC and the other Equity Stockholders have a right-of-first-refusal.³⁷ Practically speaking, unlike other potential investments, the Stockholder Exchanges are only able to get their respective capital invested back through the Dividends. Indeed, on a nominal basis, based on OCC's expectations at the time, the Stockholder Exchanges would not receive the capital invested back for seven years, or until 2021. On a discounted basis, using the 14.0% cost of equity, the 10-year discrete period Dividends are only \$120.4 million relative to the initial \$150 million investment – thus any potential capital return is pushed out well beyond the 10-year discrete period. Importantly, this discounted value is based on the returns of liquid, publicly-traded stocks, which, as previously noted, is not the case with the investment in OCC.

32. When evaluating an investment like the Stockholder Exchanges' investment in OCC, there are often discounts that are applied to valuations for a lack of marketability. Among the factors that affect discounts for the lack of marketability for minority interests are: prospects for liquidity; size of distributions (dividends, withdrawals); pool of potential buyers; risk factors; and growth prospects.³⁸

33. Unlike specified dividends for preferred stock or interest payments on loans, the Dividends are clearly not fixed, sure monies that the Stockholder Exchanges will receive. Even if the Dividends were fixed, the discrete discounted annual Dividend payments over a 10-year horizon are not expected to cover the capital invested. The level of Dividends will vary given the OCC's actual operating costs and the amount of trading activity. Moreover, as this is regulatory

³⁷ Declaration of Craig S. Donohue, October 13, 2017, ¶ 23. *See also* Article VIIA – Equity Exchanges, OCC By-Laws and Amended and Restated Stockholders Agreement, March 6, 2015.

³⁸ *See, e.g.*, Pratt, Shannon P, Alina V. Niculita, Valuing a Business, Fifth Edition, *McGraw-Hill* Companies, New York, NY, at 446-448 (2008).

capital, withdrawals aside from dividends will not be permitted. In addition, the Stockholder Exchanges do not have a controlling interest in the OCC Board (only 5 of the up to 20 OCC Board seats), so they are unable to dictate OCC actions, such as increasing the Dividend.³⁹ As discussed, the prospect for exiting the investment is very limited as is the pool of potential buyers. Moreover, as a non-profit-maximizing firm, the growth prospects and typical expected equity upside are low.

34. With respect to marketability discounts, there are numerous studies that seek to quantify the appropriate level of marketability discounts, including studies based on transactions in restricted stock as well as studies of transactions in private, pre-IPO companies.⁴⁰

35. A summary of restricted stock studies that are often cited and relied on by valuation analysts is shown below and indicates marketability discounts ranging from 13% to 45%.⁴¹

Summary of Restricted Stock Studies		
Study	Years Covered in Study	Average Discount
SEC Overall Average	1966-69	25.8%
SEC Nonreporting OTC Companies	1966-69	32.6%
Gelman Study	1968-70	33.0%
Trout Study	1968-72	33.5%
Moroney Study	1969-72	35.6%
Maher Study	1969-73	35.4%
Standard Research Consultants	1978-82	45.0%
Willamette Mgt. Associates Study	1981-84	31.2%
Silber Study	1981-88	33.8%
FMV Opinions Study	1992	23.0%
Management Planning Study	1980-96	27.1%
Johnson Study	1991-95	20.0%
Columbia Financial Advisors Study	1996-97	21.0%
Columbia Financial Advisors Study	1997-98	13.0%

Source: Pratt, Shannon. *Valuing a Business*, Fifth Edition, p. 431.

³⁹ A discount for a lack of control is often applied when valuing noncontrolling stakes in an enterprise and would result in a higher required return.

⁴⁰ Restricted stock is “identical in all respects to freely traded stock of a public company except for the fact that it is restricted from trading on the open stock market for a certain period.” Pratt, Shannon P, Alina V. Niculita, *Valuing a Business*, Fifth Edition, McGraw-Hill Companies, New York, NY, at 419-420 (2008).

⁴¹ Pratt, Shannon P, Alina V. Niculita, *Valuing a Business*, Fifth Edition, McGraw-Hill Companies, New York, NY, at 431 (2008).

36. Other sources of marketability discount levels are studies of transactions in private companies prior to these companies going public via an Initial Public Offering (“IPO”), such as studies by Baird & Company and Valuation Advisors. In its pre-IPO study, Baird & Company found a range of discounts from 13% to 68%.⁴² A summary of the Baird & Company study is summarized below:

The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock				
Study	Number of IPO Prospectuses Reviewed	Number of Qualifying Transactions	Discount	
			Mean	Median
1997-2000	1,847	266	50%	52%
1995-97	732	84	43%	41%
1994-95	318	45	45%	47%
1991-93	443	49	45%	13%
1990-92	266	30	34%	33%
1989-90	157	17	46%	40%
1987-89	98	21	38%	43%
1985-86	130	19	43%	43%
1980-81	97	12	59%	68%
All 8 Studies	2,241	543	46%	47%

Source: Pratt, Shannon. *Valuing a Business*, Fifth Edition, p. 435.

37. Valuation Advisors also conducted a Lack of Marketability Study which indicated a median range of marketability discounts of 27% to 68%.⁴³ Valuation Advisors Lack of Marketability Study is summarized in the table below. As one can see from the table below, the marketability discount increases as the time to exit the investment increases.

Valuation Advisors' Lack of Marketability Discount Study TM					
Transaction Summary Results from 1999-2006					
Time of Transaction Before IPO	1-90 Days	91-180 Days	181-270 Days	271-365 Days	1-2 Years
1999-2006 Transaction Results					
Number of Transactions	393	611	458	429	749
Median Discount	27.3%	37.5%	51.9%	61.7%	68.0%

Source: Pratt, Shannon. *Valuing a Business*, Fifth Edition, p. 440.

⁴² Pratt, Shannon P, Alina V. Niculita, *Valuing a Business*, Fifth Edition, McGraw-Hill Companies, New York, NY, at 435 (2008).

⁴³ Pratt, Shannon P, Alina V. Niculita, *Valuing a Business*, Fifth Edition, McGraw-Hill Companies, New York, NY, at 438, 440 (2008).

38. Valuing a Business, a frequently cited treatise on business valuation, notes that a typical marketability discount ranges from 35% to 50%.⁴⁴ These levels of discounts are often applied by valuation experts to interests in private companies in cases where there are no significant restrictive covenants or limiting rights in the governing stockholder agreement and tend to move towards (or perhaps even beyond) the higher end of the range of marketability discounts noted above in cases where additional, contractual restrictions exist.⁴⁵

39. In assessing the potential value of the Dividend stream for the Stockholder Exchanges on an illiquid investment in OCC, I conservatively apply a 25% to 30% lack of marketability discount to the present value of the Dividends that I calculated using a 14.0% discount rate. The result is \$137.8 million and \$128.6 million, respectively, for the value of the Dividends (under the Terminal Growth Method). That is, the \$150 million investment was worth between \$128.6 million on the low end and \$137.8 million on the high end. In other words, *ex ante*, the Stockholder Exchanges invested more into OCC than what was supported by their required return after the appropriate discounts are applied to the Dividends. Therefore, the estimated returns were actually in line or below the hurdle rate for the investment.

40. Moreover, it is not unreasonable for an expected rate of return of an investment, or actual rate of return, to exceed the hurdle rate for the investment, since the hurdle rate is simply the minimum expected return that an investor should demand before making the investment.⁴⁶ A

⁴⁴ Pratt, Shannon P, Alina V. Niculita, Valuing a Business, Fifth Edition, *McGraw-Hill* Companies, New York, NY, at 410 (2008).

⁴⁵ According to Dr. Pratt, “[m]any closely held stocks are subject to provisions that severely restrict the rights of the holder to transfer stock. Any provision that limits the right of the holder to transfer stock would tend to increase the amount of the discount for lack of marketability. In some cases, the restrictive provision may fix the value or put a ceiling on it.” Pratt, Shannon P, Alina V. Niculita, Valuing a Business, Fifth Edition, *McGraw-Hill* Companies, New York, NY, at 448 (2008).

⁴⁶ In addition, while the 2015 dividend rate to the Stockholder Exchanges was in line with the Barclays Final Presentation, the dividend rate was higher in 2016 and 2017 due to temporarily higher fees paid by members in order to fund increased technology expenses along with other expenses that I understand will likely decrease in future years.

central tenant in finance is that one should only invest in positive NPV projects (i.e., those in which the investment is below the present value of the expected cash flow, or, put differently, when the expected return exceeds the hurdle rate).

41. Unlike other equity investments, the Stockholder Exchanges do *not* have a claim on 100% of the residual cash flows of OCC and instead are entitled to only 50% of the after-tax earnings after refunds are paid to members. Therefore, the upside of the investment is capped in a way that traditional equity holders do not face. As discussed above, the Stockholder Exchanges are also prevented from changing this mechanism without OCC Board approval. The Stockholder Exchanges collectively do not have control of the OCC Board, but, rather, a minority position (only 5 of up to 20 OCC Board seats).

42. Furthermore, this analysis above is before considering the option that the Stockholder Exchanges granted to OCC in the form of the Replenishment Capital Commitment, which I discuss directly below.

Replenishment Capital Commitment

43. In addition to the \$150 million investment, the Stockholder Exchanges also were expected to contribute up to an additional \$200 million in equity capital to OCC if needed. The need for this additional capital would only arise in a situation in which OCC's capital base was materially diminished. Essentially, the Stockholder Exchanges granted a call option to OCC where OCC could demand additional capital from the Stockholder Exchanges during a period in which OCC is experiencing what would amount to significant financial or operational stress.

44. While OCC's accessing the Replenishment Capital is likely a remote contingency, if the OCC would need to access that Replenishment Capital, either the OCC would be in a dire financial position or, more likely, the financial system in total would also be in a grave financial

state, which would put a significant burden on the Stockholder Exchanges making that Replenishment Capital contribution at that time. Furthermore, given the nature of the Stockholder Exchanges' businesses, if the financial market was in turmoil, they likely would also be facing significant stress – making this a non-optimal time for the Stockholder Exchanges to be facing a capital call. Moreover, given the reason for the need for Replenishment Capital, any returns in the form of Dividends either on the original Capital Contribution or the Replenishment Capital contribution would be very much at risk. Therefore, the Stockholder Exchanges do not make the Replenishment Capital contribution decision at the time that OCC would need that additional capital, but, rather, they committed as of March 6, 2015, to make that Replenishment Capital contribution, if needed. Thus, they would be making these contributions at a time when trading volumes are likely significantly lower or OCC's operating costs are dramatically higher without being able to negotiate that investment at prevailing market terms.

45. To the extent that OCC exercises its option for the Replenishment Capital Commitment, the refunds to members and also the Dividends would be halted while there is outstanding Replenishment Capital that was issued under the Replenishment Capital Commitment. If that Replenishment Capital is outstanding for more than two years, the refunds to members would be permanently halted.⁴⁷ I understand that this agreement was based on a substantial negotiation between the Stockholder Exchanges and the member firms on the OCC Board.

46. The Stockholder Exchanges would need to be compensated for providing this kind of back-stop financing. It is essentially a call option that OCC has on the Stockholder Exchanges. Such an event is risky for the Stockholder Exchanges. These back-stops come with a cost. For

⁴⁷ See, e.g., Declaration of Craig S. Donohue, October 13, 2017, ¶ 21.

example, in providing back-stops in rights offerings for firms looking to emerge from bankruptcy, studies have shown that the typical back-stop fee is in the range of 3% to 7% of the total offering.⁴⁸ In these instances of back-stop commitments, you typically have firms that have just meaningfully improved their balance sheets, which is the opposite of what the OCC would likely be facing at the time the Replenishment Capital Commitment was called upon. As previously noted, the Stockholder Exchanges were not provided with a specific back-stop fee, but rather were compensated for the Replenishment Capital Commitment as part of the Dividends.

V. Conclusion

47. In my opinion, for the reasons explained above, the expected returns to the Stockholder Exchanges for their investment in OCC and Replenishment Capital Commitment under the Capital Plan fall within the range of returns that is reasonable for this investment and commitment. Applying the correct discount rate and adjusting for the lack of marketability, the present value of the Stockholder Exchanges' expected returns at the time they agreed to make their investments and commitments were between \$128.6 million and \$137.8 million, while the investment amount was \$150 million. Therefore, the Stockholder Exchanges were not expected to receive outsized compensation given the risk of their investment in OCC, and, thus, the expected rate of return was not unreasonable.



Marc J. Brown, CFA
August 23, 2018

⁴⁸ See, e.g., Goffman, Jay M. George Howard, "Rights Offerings Prove Popular with Both Debtors, Distressed Investors," *Journal of Corporate Renewal*, Jan/Feb 2018, at 7, and Jones Day, January 2011. Available at <https://www.jonesday.com/Rights-Offerings-in-Bankruptcy-More-Than-New-Capital-iJones-Day-Business-Restructuring-Review-i-12-01-2010/>.

EXHIBIT B

Exhibit B

OCC Capital Plan Administrative Record (File No. SR-OCC-2015-02)

Document Date	Transmittal Date	Document Description
6/13/2014	10/13/2017	Project Optimal Update June 13, 2014 – June 17, 2014 Meeting <i>[Confidential Treatment Requested]</i>
9/12/2014	10/13/2017	Oliver Wyman Presentation re: Operational/ Business Risk Capital Planning Support <i>[Confidential Treatment Requested]</i>
9/15/2014	10/13/2017	Oliver Wyman Presentation: Final Handoff Addendum <i>[Confidential Treatment Requested]</i>
9/30/2014	10/13/2017	Project Optimal Third Update <i>[Confidential Treatment Requested]</i>
11/7/2014	5/21/2015	Minutes of OCC's Board of Directors Meeting <i>[Confidential Treatment Requested]</i>
11/24/2014	10/13/2017	OCC Presentation re: Business Risk Impact to Fee & Refund Policy <i>[Confidential Treatment Requested]</i>
12/5/2014	10/13/2017	Project Optimal Alternative Capital Raise – Proposal Analysis <i>[Confidential Treatment Requested]</i>
12/8/2014	10/13/2017	Project Optimal – Analysis of Capital Raise Alternatives <i>[Confidential Treatment Requested]</i>
12/18/2014	12/19/2015	Project Optimal – Capital Plan Discussion Materials <i>[Confidential Treatment Requested]</i>
12/18/2014	12/19/2015	Minutes of OCC's Board of Directors Special Meeting <i>[Confidential Treatment Requested]</i>
12/21/2014	12/21/2014	Draft OCC Member Letter <i>[Confidential Treatment Requested]</i>
12/21/2014	12/21/2014	Draft OCC Press Release <i>[Confidential Treatment Requested]</i>

Exhibit B**OCC Capital Plan Administrative Record (File No. SR-OCC-2015-02)**

Document Date	Transmittal Date	Document Description
12/23/2014	12/23/2014	Final OCC Member Letter
12/23/2014	12/23/2014	Final OCC Press Release
1/6/2015	1/6/2015	Memorandum of Meeting with OCC and Office of Commissioner
1/12/2015	1/12/2015	Draft Proposed Rule Change <i>[Confidential Treatment Requested]</i>
1/13/2015	1/13/2015	Proposed Rule Change with Redacted Exhibits <i>[Confidential Treatment Requested]</i>
1/13/2015	1/13/2015	Memorandum of Meeting with OCC and Office of Commissioner
1/14/2015	1/14/2015	Comparison of Previously Filed Capital Plan Advance Notice with Proposed Amended Capital Plan Advance Notice
1/20/2015	1/20/2015	Non-Redacted Version of Capital Plan Term Sheet <i>[Confidential Treatment Requested]</i>
1/20/2015	1/20/2015	Non-Redacted Proposed Rule Change <i>[Confidential Treatment Requested]</i>
1/26/2015	1/26/2015	OCC Published Proposed Rule, 80 Fed. Reg. 5171
2/10/2015	3/10/2015	OCC Audit Committee Meeting Materials <i>[Confidential Treatment Requested]</i>
2/11/2015	3/10/2015	OCC Board of Directors Meeting Materials <i>[Confidential Treatment Requested]</i>
2/11/2015	3/10/2015	OCC's Risk Committee Meeting Materials <i>[Confidential Treatment Requested]</i>
2/19/2015	2/19/2015	BATS Comment Letter
2/19/2015	2/19/2015	BOX Comment Letter

Exhibit B**OCC Capital Plan Administrative Record (File No. SR-OCC-2015-02)**

Document Date	Transmittal Date	Document Description
2/20/2015	2/20/2015	Market Makers Comment Letter
2/20/2015	2/20/2015	SIFMA Comment Letter
2/23/2015	2/23/2015	OCC Response Letter re: Comments from BATS and BOX
2/23/2015	2/23/2015	OCC Response Letter re: Comments from Six Market Makers
2/24/2015	2/24/2015	OCC Response Letter re: Comments from SIFMA
2/24/2015	2/24/2015	MIAX Comment Letter
2/26/2015	2/26/2015	KCG Holdings Comment Letter
2/26/2015	2/26/2015	Notice of No Objection to Advance Notice Filing
2/27/2015	2/27/2015	SIG Comment Letter
2/27/2015	2/27/2015	KCG Holdings Comment Letter
2/27/2015	2/27/2015	BATS Comment Letter
3/1/2015	3/1/2015	MIAX Comment Letter
3/2/2015	3/2/2015	OCC Response to MIAX, SIG, and BATS Comment Letters
3/3/2015	3/3/2015	BOX Comment Letter
3/3/2015	3/3/2015	BATS Comment Letter
3/3/2015	3/3/2015	Email from Jean Cawley to SEC re: Technical Amendment to OCC's Stockholders Agreement
3/3/2015	3/30/2015	Confirmation Letter from OCC to Stockholder Exchanges <i>[Confidential Treatment Requested]</i>
3/4/2015	3/4/2015	SIG Comment Letter
3/6/2015	3/6/2015	Amendment to OCC's Schedule of Fees
3/6/2015	3/6/2015	Order Approving Proposed Rule Change, 80 Fed. Reg. 13058

Exhibit B**OCC Capital Plan Administrative Record (File No. SR-OCC-2015-02)**

Document Date	Transmittal Date	Document Description
3/12/2015	3/12/2015	MIAX Notice of Intention to Petition for Review
3/13/2015	3/13/2015	BATS Notice of Intention to Petition for Review
3/13/2015	3/13/2015	KCG Notice of Intention to Petition for Review
3/13/2015	3/13/2015	SIG Notice of Intention to Petition for Review
3/13/2015	3/13/2015	BOX Notice of Intention to Petition for Review
3/16/2015	3/16/2015	BATS Petition for Review
3/20/2015	3/20/2015	BOX Petition for Review
3/20/2015	3/20/2015	KCG Petition for Review
3/20/2015	3/20/2015	MIAX Petition for Review
3/20/2015	3/20/2015	SIG Petition for Review
4/2/2015	4/2/2015	OCC Motion to Lift Automatic Stay
4/8/2015	4/8/2015	BATS Response to Motion to Lift Automatic Stay
4/9/2015	4/9/2015	KCG Response to Motion to Lift Automatic Stay
4/9/2015	4/9/2015	SIG Response to Motion to Lift Automatic Stay
4/13/2015	4/13/2015	OCC Reply in Support of Motion to Lift Automatic Stay
4/24/2015	4/24/2015	Email from Jean Cawley to SEC re: Automatic Stay <i>[Confidential Treatment Requested]</i>
9/10/2015	9/10/2015	Order Discontinuing the Stay, 80 Fed. Reg. 55668
9/10/2015	9/10/2015	Order Granting Petitions of Review, 80 Fed. Reg. 55700
9/15/2015	9/15/2015	Petitioners' Motion to Reinstitute the Stay
9/22/2015	9/22/2015	OCC Opposition to Motion to Reinstitute the Stay

Exhibit B**OCC Capital Plan Administrative Record (File No. SR-OCC-2015-02)**

Document Date	Transmittal Date	Document Description
9/25/2015	9/25/2015	Petitioners' Memorandum in Further Support of Reinstitution Motion
10/7/2015	10/7/2015	OCC Statement in Support of Affirming March 6, 2015 Order
10/7/2015	10/7/2015	BATS, BOX, MIAX Statement in Opposition to the Order
10/7/2015	10/7/2015	SIG Statement in Opposition to the Order
10/7/2015	10/7/2015	KCG Statement in Opposition to the Order
10/7/2015	10/7/2015	PEAK6 Statement in Opposition to the Order
10/16/2015	10/16/2015	OCC Brief in Opposition to Motion for Referral to Hearing Officer and Discovery
10/16/2015	10/16/2015	Declaration of Craig S. Donohue
12/17/2015	10/13/2017	OCC Presentation re: 2016 Clearing Fee Schedule <i>[Confidential Treatment Requested]</i>
12/17/2015	10/13/2017	Minutes of Special CPC Meeting <i>[Confidential Treatment Requested]</i>
12/22/2015	12/22/2015	SIG Letter in Support of Reinstitution of Stay
2/5/2016	2/5/2016	Petitioners' Motion to Expedite
2/11/2016	2/11/2016	Order Approving Proposed Rule Change, 81 Fed. Reg. 8294
2/12/2016	2/12/2016	Petition for Review by the D.C. Circuit
6/16/2016	6/16/2016	Petitioners' Brief on Petition for Review by D.C. Circuit
6/27/2016	6/27/2016	Brief of Amici Curiae in Support of Petitioners
8/4/2016	8/4/2016	SEC's Brief on Petition for Review by D.C. Circuit
8/25/2016	8/25/2016	OCC Initial Response Brief in Opposition to Petitioners
9/23/2016	9/23/2016	Petitioners' Reply Brief to Intervenor

Exhibit B**OCC Capital Plan Administrative Record (File No. SR-OCC-2015-02)**

Document Date	Transmittal Date	Document Description
10/14/2016	10/14/2016	OCC Final Response Brief in Opposition to Petitioners
10/14/2016	10/14/2016	SEC's Final Brief
10/14/2016	10/14/2016	Petitioners' Final Reply Brief to Intervenor
8/8/2017	8/8/2017	<i>Susquehanna Int'l Grp., LLP, et al., v. Securities and Exchange Commission</i> , No. 16-1061 (D.C. Cir. 2017)
9/7/2017	9/7/2017	Petitioners' Motion to Stay Payment of Dividends
9/13/2017	9/13/2017	OCC Response to Motion to Stay Payment of Dividends
9/14/2017	9/14/2017	Order Denying Motion to Stay (File No. SR-OCC-2015-02)
10/13/2017	10/13/2017	OCC Post-Remand Submission in Support of Re-Approval of the Capital Plan with Donohue Declaration
11/30/2017	11/30/2017	Petitioners' Response to OCC's Post-Remand Submission
12/20/2017	12/20/2017	OCC Reply to Petitioners' Submission on Remand
3/09/2018	3/09/2018	Petitioners Comment on Capital Plan
4/10/2018	4/10/2018	SIFMA Comment Letter on Capital Plan
4/12/2018	4/12/2018	SIG Comment on Capital Plan
4/27/2018	4/27/2018	OCC Response to April 10 SIFMA Comment Letter
8/23/2018	8/23/2018	AlixPartners Report