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September 27, 2018

Mr. Brent J. Fields
Secretary
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Re: File No. SR-OCC-2015-02

Dear Mr. Fields:

I write on behalf of Petitioners Susquehanna International Group, LLP, Miami International Securities Exchange, LLC, BOX Exchange, LLC, Virtu Financial Inc., and Virtu Americas LLC ("Petitioners") to respond to the latest attempts by the Options Clearing Corporation ("OCC") to justify its indefensible Capital Plan ("Plan"). OCC has made these attempts—which include a report purporting to defend the astronomical investment returns the shareholder exchanges are receiving on the backs of public investors and a 58-slide power point presentation summing up OCC's arguments—despite the fact that the Commission set a deadline of **October 14, 2017** for OCC to "file **any additional statements or information** that it considers relevant to the Commission's reconsideration, including but not limited to information OCC's board of directors considered in approving the Plan."[1] OCC could have, and should have, filed these materials a year ago when its submissions were due. Because OCC instead has waited until this late date to make these filings, Petitioners respectfully request that the Commission accept this letter and the report of Professor Peter Easton responding to them. Petitioners and their counsel also would welcome a final opportunity to discuss their views with Commission staff and answer any remaining questions the Commission may have.

As our submissions to date explain,[2] the Commission is required by the Exchange Act to reject the Plan because it:

[1] Order Scheduling Filing of Statements on Review, Exchange Act Release No. 81629 at 2 (Sept. 14, 2017).

[2] Since the D.C. Circuit's remand, Petitioners' submissions have included: Letter from David H. Thompson (Aug. 25, 2017); Petitioners' Submission on Remand from the United States Court of Appeals for the District of Columbia Circuit in Opposition to Proposed Rule Change Concerning a Proposed Capital Plan for Raising Additional Capital That Would Support The Options Clearing Corporation's Function as a Systemically Important Financial Market Utility (Nov. 30, 2017) ("Petitioners' Submission on Remand"); Petitioners' Reply to the Option Clearing

- is not designed to protect investors and the public interest;[3]
- imposes burdens on competition neither necessary nor appropriate in furtherance of the purposes of the Exchange Act;[4]
- fails to provide for the equitable allocation of reasonable dues, fees, and other charges among OCC's participants and is designed to permit unfair discrimination among participants in the use of the clearing agency;[5] and
- was adopted in a process that failed to comply with OCC's own rules.[6]

But the Commission need not simply take our word for the proposition that the Plan should be rejected. The law firm currently representing OCC, Willkie Farr & Gallagher LLP, represented market makers **opposed** to the Plan, including a subsidiary of Susquehanna, earlier in this proceeding.[7] Willkie Farr accurately predicted that under the Plan OCC would "increasingly become a profit tool for the five owners to monetize and leverage at the expense of public investors and market participants."[8] The intervening three years have confirmed (and heightened) such concerns, and the Commission is bound to reject the Plan and its attempt to "exploit[ ]" OCC's asserted capital need "as an opportunity to create a wealth transfer vehicle by the [shareholder exchanges]."[9]

<u>Investors and the Public Interest</u>

The Plan poses a clear threat to investors and the public interest: it transforms OCC, a market-critical monopoly, from a non-profit utility into a for-profit entity that generates massive dividends for its shareholder exchanges. To make matters worse, the dividends are not tied to the size of the shareholders' capital contributions but rather to OCC's *expenses*. As OCC's expenses increase, the size of the shareholder exchanges' dividends also increase. It is difficult to think of a design *less* protective of investors and the public interest, as the Plan eviscerates the incentives of the shareholder exchanges to keep OCC's expenses in check. Willkie Farr put it well when representing the market makers earlier in this proceeding:

> Paying its five owners an unreasonably high back-door annuity into perpetuity at the expense of the investing public will re-shape OCC into an entity that will essentially operate as a for-profit company. Once OCC transaction fees become a profit-leveraging incentive for the five owners, the longstanding practice of keeping

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Corporation's Reply to Petitioners' Submission on Remand (Jan. 10, 2018); Letter from David H. Thompson (Mar. 9, 2018); Letter from David H. Thompson (Apr. 13, 2018); and Letter from David H. Thompson (Aug. 24, 2018).

[3] 15 U.S.C. § 78q-1(b)(3)(F).

[4] *Id.* § 78q-1(b)(3)(I).

[5] *Id.* § 78q-1(b)(3)(D), (F).

[6] *Id.* § 78s(g)(1).

[7] *See* Letter from Howard L. Kramer, Willkie Farr & Gallagher LLP (Feb. 20, 2015) ("Willkie Letter").

[8] *Id*. at 9.

[9] *Id*. at 11–12. *See also id.* at 12 ("[R]egulatory costs should be shared by members and owners and not used as an excuse to monetize OCC at the expense of investors."), 13 (The attempt by the shareholder exchanges "to exploit OCC as an asset as set out in the Plan . . . is an abuse of OCC's government approved monopoly position as the sole clearing facility for listed options.").

OCC costs low to encourage growth for all constituents will be greatly diminished.[10]

Of course, fears that the Plan would lead to explosive growth in OCC's expenses have now been realized, with the growth rate eclipsing 20% in 2017:

Year	**Expenses (in millions)**	**Increase from previous year**
2014	$196.6	—
2015	$217.6	10.7%
2016	$245.7	12.9%
2017	$298.1	21.3%

OCC links its 2012 designation as a SIFMU to its ever-increasing expenses.[11] But what has transpired is starkly different than the 2.3% expense growth rate OCC projected when proposing the Plan in 2015.[12] Indeed, OCC advised the Commission at that time that projections of much higher growth rates should be rejected because "*[r]ecent increases have been caused largely by the cost of meeting increased regulatory demands that are not likely to recur on an ongoing basis by OCC.*"[13] Yet years later, in a remarkable turn, OCC took others to task for not expecting much higher budget growth. For example, in a 2018 response to a SIFMA comment letter, after listing factors leading to the surge in budget growth dating back to its 2012 SIFMU designation, OCC chided SIFMA that "*[n]one of this expense growth should be surprising at all to SIFMA* . . . ."[14] On this basis, a logical question would be why any of this should have been a surprise to OCC.

Of course, OCC had strong incentives to assert to the Commission low expense growth projections when initially proposing the Plan (to dampen concerns that the Plan quickly would begin producing dividend rates even higher than the already exorbitant rates based on OCC's own projections), and it now has strong incentives to argue that increased expenses should have been expected all along (to argue that expenses are increasing for reasons independent of the Plan's dividend structure). Regardless of the actual subjective motivations of anyone involved, this situation highlights the inherent conflict of interest and appearance of impropriety created by a dividend structure that ties the shareholder exchanges' returns to OCC's expenses. Correcting for this faulty dividend structure is especially important in a time of increased regulatory burdens, as spending discipline is needed to ensure that expenses are not increased more than necessary. This

[10] *Id.* at 9. *See also id.* at 2 ("We are extremely concerned about the Plan's inherent conflict of interest that could transform OCC from an impartial operator of a non-profit utility into a fee and revenue stream for the five owners."), 4 ("This new structure would encourage ever-larger budgets that would, in turn, unjustly reward the five owners with increasingly exorbitant dividend payments . . . . We question how [the shareholder exchanges] could fairly guide OCC on budget efficiencies in years to come when larger budgets would serve to increase their dividend and claimed capital asset values. This new structure introduces a for-profit element for the five owners that should not be part of any Plan by OCC to meet new regulatory costs and capital needs."), 6 ("[D]isturbing the checks and balances process in the fashion described above invites even larger growth and inefficiencies in future OCC budgets.").

[11] Letter from Jeffrey B. Korn, Willkie Farr & Gallagher LLP at 2 (Aug. 29, 2018).

[12] OCC Brief in Support of Motion to Lift Stay at 11 (Apr. 2, 2015).

[13] OCC Reply Brief in Support of Motion to Lift Stay at 9 (Apr. 13, 2015).

[14] Letter from Joseph Kamnik, OCC at 7 (Apr. 27, 2018).

is a particularly bad time for a Plan that perversely *rewards* the shareholder exchanges when OCC's expenses increase.

OCC protests that "[t]here can be no question that maintaining adequate capital protects investors and is in the public interest."[15] But the question before the Commission is not whether the public generally is interested in an adequately capitalized OCC; rather, it is whether *this particular capital plan* is designed to protect investors and the public interest. It is not: transforming OCC into a for-profit monopoly that pays its shareholders astronomical dividends that increase along with OCC's expenses is *inimical* to investors and the public interest.

At any rate, OCC's defenses fail on their own terms, because: (a) OCC has not shown that it needed to raise *any* capital from the shareholder exchanges; and (b) even if it did need to raise capital from the shareholder exchanges, OCC has not shown that the dividend structure associated with OCC's capital contribution is reasonable or appropriate.

The Commission's Rules Did Not Require a Capital Contribution from the Shareholder Exchanges

In its latest submission, OCC states that it "needed to raise, as equity, capital of a total of **$364 million** between liquid net assets and replenishment capital."[16] This is **false**. In support, OCC cites Commission Rule 17Ad-22(e)(15).[17] That Rule requires OCC to hold "liquid net assets funded by equity equal to the greater of either (x) six months of the covered clearing agency's current operating expenses, or (y) the amount determined by the board of directors to be sufficient to ensure a recovery or orderly wind-down of critical operations and services of the covered clearing agency."[18] At the time it proposed the Plan, OCC determined that this "Baseline Capital Requirement" was **$117 million**.[19] OCC could easily have met this requirement with cash on hand and fee revenue. Indeed, the Plan is funded in part by $25 million in pre-existing equity and $72 million of equity accumulated through retained fees, and in proposing the Plan OCC anticipated rebating an additional $40 million for activities in 2014.[20] OCC therefore did not need *any* equity from the shareholder exchanges, much less an immediate $150 million infusion, to meet this requirement—which, as it turns out, had a compliance date of April 2017.[21] Rule 17Ad-22 also requires OCC to have a "viable *plan* . . . for raising additional equity should its equity fall close to or below the amount required" by the regulation.[22] But this does not affect the amount of equity OCC currently is required to have on the books, and there is no requirement that the replenishment capital equal the baseline capital requirement.

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[15] Jeffrey B. Korn & Priya R. Aiyar, The Path Forward for the Commission's Re-Approval of the OCC Capital Plan at 30 (Sept. 4, 2018) ("OCC Slideshow").

[16] OCC Slideshow at 19.

[17] OCC also cites PFMI Principle No. 15, but there is no indication that that Principle would require OCC to hold more capital than required by Rule 17Ad-22(e)(15). *See* Willkie Letter at 3.

[18] 17 C.F.R. § 240.17Ad-22(e)(15)(ii).

[19] Order Approving Proposed Rule Change Concerning a Proposed Capital Plan for Raising Additional Capital That Would Support The Options Clearing Corporation's Function as a Systemically Important Financial Market Utility, Release No. 34-74452 at 7 (Mar. 6, 2015).

[20] *Id*. at 8.

[21] *See* Standards for Covered Clearing Agencies, Release No. 34-78961, 81 Fed. Reg. 70786-01, 70786 (Oct. 13, 2016).

[22] 17 C.F.R. § 240.17Ad-22(e)(15)(iii) (emphasis added).

OCC is well aware of these points, as Willkie Farr made them forcefully before switching sides in this dispute:

> OCC does not substantiate the need for its proposed $130 million Target Capital Buffer [in addition to the $117 million Baseline Capital Requirement]. It is not required under proposed Rule 17Ad-22 . . . . Further, the proposed Rule [17]Ad-22 provision for a viable plan for raising additional equity does not require that OCC's additional equity commitment equal its Baseline Capital Requirement amount. Accordingly, OCC has offered neither legal nor financial support for the vast majority of its claimed capital needs, and has not justified its Plan and attendant high dividends as an appropriate means of capitalization.[23]

For these reasons, Rule 17Ad-22 did not require OCC to have $247 million in equity, much less $364 million.[24] OCC therefore cannot rely on that provision to support the Plan. Even apart from these points, the $247 million target capital requirement is unsupported because it is (a) based on a hasty modeling process marked by several shortcomings and (b) pegged to an extremely remote 1-in-1,000-year risk scenario.[25]

Indeed, OCC's claimed basis for its Target Capital Requirement—that its consultant Oliver Wyman "concluded that OCC required $226 million to address its operational risks"—is inaccurate.[26] Oliver Wyman simply presented the cash value of a set of identified risk scenarios (based on its flawed analysis) at three different confidence levels: 1-in-100-year risk level (99% confidence); 1-in-200-year risk level (99.5% confidence); and the extremely remote 1-in-1,000-year risk level (99.9% confidence), which level was identified with the $226 million cash value.[27]

Even at this late stage, the record before the Commission lacks any basis for (1) why OCC selected the 1-in-1,000-year set of loss scenarios over the other sets of loss scenarios identified by Oliver Wyman; (2) why OCC determined to pre-fund 100% of the aggregate cash value of that set of loss scenarios rather than pursue cheaper alternatives such as purchasing insurance; and (3) why OCC determined that it needed the pre-funded cash reserves against the loss scenarios immediately when they had a 1-in-1,000-year chance of occurring. Rule 17Ad-22 is not the answer; Barclay's "estimated that OCC [would] be in compliance with the Regulatory Capital Requirement . . . by the end of 2014 through retention of earnings."[28] Accordingly, OCC's claim that "the analyses conducted by Oliver Wyman and Barclays amply support the reasonableness of the capital target" is without merit.[29]

The record also lacks any basis for OCC's determination that it needed replenishment capital of $117 million, equal to six months' operating expenses. Even its belated submission glosses over this with a single conclusory statement that, "[w]ith the assistance of Oliver Wyman and Barclays, OCC estimated that it would need replenishment capital of $117 million, which

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[23] Willkie Letter at 3.

[24] What is more, as Willkie Farr has explained, the replenishment capital commitment should be treated as debt, not equity, because it "is in the nature of a loan." Willkie Letter at 8.

[25] *See* Petitioners' Remand Submission at 19–20.

[26] OCC Slideshow at 16.

[27] *See* Petitioners' Reply to the Option Clearing Corporation's Reply to Petitioners' Submission on Remand at 3 (Jan. 10, 2018); *see also* OCC Slideshow at 17.

[28] *See* Petitioners' Submission on Remand at 19 (alteration in original).

[29] OCC Slideshow at 43.

could be increased to as much as $200 million if the Baseline Capital Requirement increases."[30] OCC provided no supporting evidence or analysis.

OCC Had Other Options for Raising Capital

Even if OCC could support its decision to raise an additional $150 million in equity, it had options other than seeking a contribution from the shareholder exchanges. For one, it could have opened the process to other investors who would have been eager to participate. OCC says that it "did not have [this] option," because "OCC's stockholders have governance rights including anti-dilution and veto rights, which were approved by the SEC at OCC's inception and are protected under Delaware law."[31] But these rights are not written in stone, and the shareholder exchanges could change them. Furthermore, they were approved by the Commission on the understanding that OCC would operate as a non-profit market utility that rebated all of its profits back to clearing members, and Delaware law cannot trump the requirements of the Exchange Act. The shareholder exchanges cannot be allowed to misuse their governance rights to transform OCC into a for-profit monopoly that harms investors and the public interest.

For another, OCC could simply have retained earnings until it met its capital target. OCC insists that this option would have required increased fees, would have been highly tax inefficient, and would have transformed fees into equity that accrued to the exclusive benefit of the shareholder exchanges.[32] But none of these reasons, either individually or collectively, suffice to justify the threat to investors and the public interest posed by the Plan.

First, there is no reason why OCC would have had to increase fees to meet its capital needs by retaining earnings. As explained above, Rule 17Ad-22 required OCC to have $117 million in equity, and OCC already had retained nearly that amount when proposing the Plan. And OCC easily could have raised hundreds of millions of dollars in additional equity very quickly by retaining fees. In just three years under the Plan OCC has paid out approximately **$345 million** in refunds and dividends.[33] OCC could have met any reasonable capital needs by retaining a relatively small portion of this amount. Furthermore, even if raising capital by increasing fees would have required increased fee levels, any such increase would only have been **temporary**, until OCC hit its capital target. Under the Plan, by contrast, OCC **permanently** is saddled with a dividend structure that provides incentives for increased fees and expenses and transforms OCC into a for-profit monopoly. Clearing members also permanently are saddled with higher **net fees**. Assume, contrary to reason, that OCC's expenses were the same after hitting its capital target through either retaining fees or under the Plan (this is contrary to reason because of the incentives the Plan creates for increasing expenses). In the former case, 100% of excess fees would be returned to clearing members. Under the Plan, only 50% of excess fees are returned. This has a substantial effect on the net fees paid by clearing members. Based on OCC's projected expenses for 2018, for example, the 50% of excess fees retained by OCC to pay dividends will amount to approximately $58 million.[34]

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[30] *Id.* at 19.
[31] *Id*. at 4.
[32] *Id*. at 21.
[33] *See* OCC, 2017 ANNUAL REPORT 30 (2017); OCC, 2015 ANNUAL REPORT 24 (2015).
[34] *See* Letter from David H. Thompson at 2 (Apr. 13, 2018).

Second, any tax inefficiencies associated with retaining fees likewise would have been temporary, lasting only until OCC hit its capital target. Under the Plan, by contrast, OCC **perpetually** will be paying taxes for, as Willkie Farr put it, "the privilege of paying the five owners an exceedingly high rate of return."[35] Tax consequences thus cut sharply against the Plan.

Third, it is not necessarily the case that the increased fees must redound to the benefit of the shareholder exchanges. As Willkie Farr explained, "excess fee revenue" could be "escrowed to a Payer Asset Account that would not be an asset or claim for the benefit of the five owners . . . . In the event of OCC demutualization, the Payer Asset Account would be . . . distributed to investors rather than be allocated to the five owners at the expense of the investors who paid into it."[36] And even if the shareholder exchanges could claim the retained earnings for themselves, any such one-time wealth transfer from fee-paying clearing members would be much less damaging to investors and the public interest than the perpetual wealth transfer that will take place each and every year under the Plan in the form of dividends paid with excess clearing fees.

In sum, any short-term benefits to OCC from raising capital from the shareholder exchanges are easily outweighed by the long-term harms to investors and the public interest caused by the Plan's transformation of OCC into a for-profit monopoly.

The Plan's Dividend Structure Harms Investors and the Public Interest

Even if OCC could support the Plan's capital levels and its decision to raise $150 million from the shareholder exchanges, the Plan still would harm investors and the public interest because of its dividend structure. Indeed, as the D.C. Circuit recognized, the Plan's dividends are "a central issue" in this proceeding.[37]

Despite the D.C. Circuit's recognition of the centrality of the dividend issue, OCC incredibly appears to take the position that it is *irrelevant*: the Exchange Act, says OCC, does not "regulate equity returns."[38] In OCC's view, then, the shareholder exchanges apparently could extract admittedly usurious dividends and the Exchange Act would have nothing to say on the matter. OCC is gravely mistaken about this.[39]

As explained above, the Plan's dividend structure is harmful to investors and the public interest because it transforms OCC into a for-profit monopoly and ties the size of the shareholder exchanges' dividends to the size of OCC's expenses. OCC responds that the dividend rate is reasonable. OCC is wrong about this, as we will explain, but this response fails to address a key issue: it is not just the *rate* of OCC's dividends that are the issue but also the *structure* that creates incentives for the shareholder exchanges to seek ever increasing expenses. Indeed, to a certain extent OCC's dividend rate defies analysis because the dividend amount is not tied in any way to the size of the shareholder exchanges' investment. This flawed structure alone should serve to

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[35] Willkie Letter at 10.
[36] *Id*.
[37] *Susquehanna Int'l Group, LLP v. SEC*, 866 F.3d 442, 446 (D.C. Cir. 2017).
[38] OCC Slideshow at 30.
[39] OCC also insists that the dividend rate "was negotiated and approved by an Ad Hoc Strategic Advisory Group," *id.* at 44, but this is precisely the sort of trust the process argument that the D.C. Circuit rejected. Indeed, this hardly was an arms-length negotiation given that the shareholder exchanges sat on both sides of the table (two of them were members of the advisory group) and each shareholder exchange could veto any proposal that did not satisfy it.

invalidate the Plan, wholly apart from any assertions about the shareholder exchanges' rate of return.

In any event, the dividends being paid to the shareholder exchanges are by any estimation massive.[40] Based on Barclays projections made while the Plan was under consideration, the shareholder exchanges expected that their investment would return approximately 17–20% per year for the first decade of the Plan.[41] Willkie Farr similarly posited "a rate of return of over 18% to the five owners," and it struggled to come up with adjectives that would adequately convey the magnitude of that return, using terms such as "non-competitive," "overly generous," "exorbitant," "high," "unreasonably high," "extraordinary," and "extremely high" to describe it.[42]

Of course, OCC's projections were based on its unreasonably low projected expense growth rates, which have been refuted by experience. Consider instead the following, which starts with the experience to date under the Plan, includes OCC's projected 2018 expenses, and then continues through 2021 at a projected expense growth rate of 10% (conservative in light of OCC's recent performance):

Year	**Expenses (in millions)**	**Dividends (in millions)[43]**	**Dividend Rate**
2015	$217.6	$19.7	13.1%
2016	$245.7	$25.6	17.1%
2017	$298.1	$32.5	21.7%
2018 (projected)	$347.6	$45.3	30.2%
2019 (projected)	$383.4	$49.8	33.2%
2020 (projected)	$420.6	$54.8	36.5%
2021 (projected)	$462.7[44]	$60.3	40.2%

As the chart shows, it reasonably can be expected that by 2021 the shareholder exchanges will have been paid nearly **$290 million** in dividends (nearly doubling their money in six years)

[40] OCC claims that, apart from the dividend, "[t]here was no rational business reason for the Stockholder Exchanges to contribute this capital." *Id.* at 25. But this ignores the obvious and compelling reason for the shareholder exchanges to contribute capital to OCC—OCC is essential to their respective businesses as options exchanges and they therefore could not conduct their businesses and earn their profits without OCC. Any dividends they derive over and above that value is additive. At any rate, even if the shareholder exchanges did need an additional financial incentive to invest in OCC, a reasonable dividend tied to the size of their investment would have been appropriate, not the massive and ill-designed dividends they have been granted.
[41] *See* Petitioners' Remand Submission at 13–14.
[42] *See* Willkie Letter at 1, 2, 3, 4, 8, 9, 10.
[43] To estimate dividends for 2018 and beyond, we have added 33% to the projected expenses as called for by the Plan, divided that 33% buffer by two to arrive at the amount retained for paying dividends, and then reduced that amount by 21% to account for taxes.
[44] Because half of this figure is less than the $247 million OCC has in equity, Rule 17Ad-22 would not require OCC to retain any additional equity at this level of expenses.

and will be getting an annual return of **over 40%** and growing. Willkie Farr thought that an 18% return was exorbitant; what actually is transpiring is obscene.[45]

Apparently aware that it has failed to justify the Plan's dividends, OCC in a last-ditch effort has now submitted a report by a financial analyst, Marc Brown, seeking to justify the dividends.[46] The Brown Report fails in this task.

First, Brown blinded himself to what has transpired under the Plan. Instead, he based his analysis on a Barclays estimate of the present value of projected dividends in December 2014.[47] Although we do not have access to that Barclays estimate because OCC has submitted it confidentially,[48] presumably it is based on the same unreasonably low projected expense growth rate that OCC initially used to sell the Plan to the Commission. Questions about the soundness of that growth rate have now proven correct, and OCC should not use an analysis based on it to justify the Plan.

Second, and relatedly, the Brown Report devolves into the same type of "trust the process" reasoning that the D.C. Circuit condemned.[49] As Brown concedes, "for purposes of [his] analysis, [he] accept[ed] the discrete annual Dividends projected in the Barclays Final Presentation."[50] In other words, he trusted that the OCC process arrived at a reasonable dividend projection rate. As just explained, it did not.

Third, the Brown report is fundamentally unsound, as explained in the expert report of Professor Peter Easton, the Notre Dame Alumni Professor of Accountancy and Director of the Center for Accounting Research and Education at the Mendoza College of Business, the University of Notre Dame, that we submit along with this filing.[51] Professor Easton identifies three fundamental flaws in Brown's analysis: the likening of the shareholder exchanges' investment in OCC to a typical private equity investment;[52] the use of the CAPM to estimate OCC's cost of capital;[53] and the positing of lack of marketability as a risk factor for the shareholder exchanges' investment.[54] Professor Easton concludes that an annual return of five percent of the $150 million invested—or $7.5 million—would be a reasonable return for the shareholder exchanges.[55]

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[45] OCC also points to the replenishment capital commitment to support the shareholder exchanges' return. But, as Willkie Farr has explained, the Plan "is structured so that the likelihood of [replenishment capital] being called is very low." Willkie Letter at 8. Among other things, OCC never has had to draw on shareholders' equity to meet operational expenses, it now has $247 million in capital—$130 million more than required by Rule 17Ad-22 when the Plan was developed, OCC sets its fees to obtain revenue 33% above projected expenses, and its monopoly status gives it substantial power to increase fees even further if necessary.

[46] *See* Expert Report of Marc J. Brown, CFA (Aug. 23, 2018) ("Brown Report") (attached as Exhibit A to Letter from Jeffrey B. Korn (Aug. 23, 2018)).

[47] Brown Report ¶ 21.

[48] OCC has provided Petitioners with access to the confidential materials it submitted after the D.C. Circuit's remand order, but not those it submitted before that time. The Commission should not rely on materials Petitioners and other members of the public have not seen to approve the Plan.

[49] *Susquehanna Int'l Group, LLP*, 866 F.3d at 447–48.

[50] Brown Report ¶ 21 n.27.

[51] Expert Report of Professor Peter D. Easton, Ph. D. ¶ 1 (Sept. 24, 2018) ("Easton Report") (attached as Exhibit A).

[52] *Id.* ¶¶ 28–31.

[53] *Id.* ¶¶ 32–33.

[54] *Id.* ¶¶ 35–40.

[55] *Id.* ¶ 41.

Professor Easton's valuation is supported by the extremely low-risk nature of the shareholder exchanges' investment in OCC.[56] OCC is a monopoly performing a critical public function; it thus has tremendous power to set its fees at any level necessary to recoup its operating expenses. Indeed, since it was created several decades ago OCC **never** has been required to dip into shareholders' equity to pay for its operating expenses. This remained true during the global financial crisis. From 2007 through 2009, while markets around the world were in danger of melting down, OCC rebated **over $180 million** to its clearing members:

- 2007: $58,666,00 in rebates;[57]
- 2008: $64,651,000 in rebates;
- 2009: $57,928,000 in rebates.[58]

Given the strength of its performance and market position, it is not surprising that OCC's Standard and Poor's rating is AA+/Stable, a fact that OCC touted in a recent press release.[59] "Of the 9,328 global entities and sovereigns rated by S&P," OCC boasted, "only one percent have an AA+/Stable rating like OCC."[60] One of those entities is the United States Government, whose sovereign debt currently returns around three percent.[61]

Additional data supports Professor Easton's conclusion that a five percent dividend rate would be reasonable for OCC's investment in OCC. Like OCC, the National Securities Clearing Corporation and Fixed Income Clearing Corporation are clearinghouses operating in the United States. Those clearinghouses are both 100% owned by the Depository Trust and Clearing Corporation ("DTCC"). Of the common and preferred stock issued by the three entities, only DTCC's Series C preferred stock pays a dividend. Until June of 2020, that dividend is paid at a fixed annual rate of 4.875%; thereafter it is LIBOR + 3.167%.[62] (Currently, that would be about 5.5%.[63]) This is remarkably similar to Petitioner Susquehanna's earlier offer to provide up to $150 million to OCC at LIBOR + 3%.[64] Susquehanna has now improved that offer to ask for only the Federal Funds Rate in return for its $150 million.[65]

As explained above, the Brown Report compared OCC not to other clearinghouses performing as required public utilities but rather to entities typically invested in by private equity investors. Indeed, the Brown Report incredibly says that investing in OCC may be "less attractive than a typical private equity investment."[66] This fact alone undermines the Brown Report, as the notion that the shareholder exchanges' investment in OCC is *less attractive* than a typical private equity deal is indefensible. As Professor Easton explains, "the risk inherent in investing in the[ ] types of

[56] *See id.* ¶¶ 19–26.
[57] OCC, 2007 ANNUAL REPORT 22 (2007), *available at* https://goo.gl/oT9H4W.
[58] OCC, 2010 ANNUAL REPORT 34 (2010), *available at* https://goo.gl/HuiUJt.
[59] *See* Press Release, OCC, S&P Says OCC Credit Rating Unaffected by SEC Approval of New Financial Safeguards Framework (Aug. 22, 2018), https://goo.gl/LE1KBg.
[60] *Id*.
[61] *See Daily Treasury Yield Curve Rates*, U.S. DEP'T OF THE TREASURY, https://goo.gl/T356bg.
[62] *See* DTCC, CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2017 AND 2016, AND INDEPENDENT AUDITOR'S REPORT 43 (Mar. 23, 2018), *available at* https://goo.gl/2TTRtS.
[63] *See LIBOR, Other Interest Rate Indexes*, BANKRATE (Sept. 18, 2018), https://goo.gl/EHLQN6.
[64] *See* Letter from David H. Thompson at 1 (Aug. 24, 2018).
[65] *Id*.
[66] Brown Report ¶ 23.

private equity assets [discussed in the Brown report] is much higher than the risk inherent in the Shareholder Exchanges' investment in the mature, stable, monopolistic, AA+ rated OCC."[67]

Undue Burden to Competition

The public has an interest in a competitive options exchange marketplace. The Plan unduly burdens that competition by providing massive subsidies to the shareholder exchanges to the detriment of nonshareholder exchanges. OCC unwittingly supports this argument, as it stresses that the exchanges' "compet[ition] for order flow . . . is fierce" and that the exchange market is an "intensely competitive environment."[68] Professor Easton has opined that a fair return to the shareholder exchanges on their investment would be $7.5 million a year. Instead, they are projected to be paid over $45 million for 2018 and possibly $60 million by 2021. The shareholder exchanges are thus being subsidized by tens of millions of dollars every year. To make matters worse, even when the nonshareholder exchanges win they lose. That is because a portion of the fees paid for transactions they facilitate are used to pay the shareholder exchanges' dividends.

OCC attempts to downplay the effects of this massive wealth transfer on competition, stating that even were a $30 million dividend exclusively used to subsidize the shareholder exchanges' equity options products "it would be two cents or less per contract."[69] But two cents per contract is by no means a trivial amount. At OCC's current fee levels, *maximum* clearing fees are five cents per contract.[70] OCC also touted a (short-lived) 2016 fee reduction that reduced fees by less than a penny per contract.[71]

There also is evidence that the Plan is affecting competition by leading to consolidation in the exchange marketplace. The owner of one of the shareholder exchanges, CBOE Holdings, acquired Bats Global Markets, a nonshareholder exchange and former petitioner in this matter opposed to the Plan. When encouraging their shareholders to approve the acquisition, the companies emphasized that "Bats believes that the capital plan has the potential to result in a wealth transfer from options investors to the OCC's stockholder exchanges, stifling future competition in the options market and increasing the costs of trading listed options."[72] Bats was right about this, and the Commission should not approve a Plan that unduly burdens competition by perpetually tilting the marketplace in favor of the shareholder exchanges.

Inequitable and Discriminatory Treatment

The Plan favors the shareholder exchanges at the expense of nonshareholder exchanges and clearing members.

First, the Plan discriminates against nonshareholder exchanges by paying the shareholder exchanges lavish dividends. OCC responds that the nonshareholder exchanges are "differently situated" because they have not contributed capital to OCC.[73] But the nonshareholder exchanges, of course, were never given the opportunity because the shareholder exchanges have jealously

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[67] Easton Report ¶ 29.
[68] OCC Slideshow at 32–33.
[69] *Id.* at 33.
[70] *See* OCC Schedule of Fees, *at* https://goo.gl/B6JNCy.
[71] *See* OCC Declares Clearing Member Refund and Dividend for 2015 and Reduction of Fees under Approved Capital Plan (Dec. 17, 2015), *available at* https://goo.gl/T3r7Hx.
[72] CBOE Holdings & Bats Global Markets, Inc., Joint Proxy Statement/Prospectus at 54–55 (Dec. 9, 2016), *available at* https://goo.gl/iY27jP.
[73] OCC Slideshow at 36.

guarded their right to exclude anyone else from the investment opportunity they have given themselves. OCC's response simply takes the discrimination to another level: from the receipt of dividends to the opportunity to participate in the investment opportunity. Either way, the discrimination is unjustified.

Second, the Plan treats the clearing members inequitably. To meet its capital target, OCC needed to add $222 million to the $25 million it already had on hand. It did so by accepting $150 million from the shareholder exchanges and funding the remaining amount from fee revenue. Because, as OCC has stressed, retained fees are taxed, OCC presumably retained around $110 million in clearing fees to fund the remaining $72 million. While the shareholder exchanges were rewarded with lavish dividends for their capital contribution, the clearing members for their part saw their refunds slashed in half, from 100% to 50% of excess fees.

The inequitable treatment of clearing members only gets worse if it takes OCC longer than two years to repay replenishment capital. In that event, clearing members' refunds would be eliminated *entirely*, while the shareholder exchanges would get *all* excess fees in dividends (after OCC pays taxes on those fees). This is the case even though clearing members would fund the repayment of replenishment capital through their payment of clearing fees.

There is no defense for the Plan's inequitable treatment of clearing members. OCC insists that clearing members "have no equity investment,"[74] but that is only because the shareholder exchanges have claimed the tens of millions of dollars the clearing members have contributed to OCC's capitalization for themselves. Clearing members contributed nearly three-quarters as much as the shareholder exchanges to OCC's capital raise, and moving forward OCC will look to them first in the form of retained fees to fund any additional capital needs. But rather than being rewarded for this, the clearing members are being punished.

OCC's Bylaws

To approve the Plan, the Commission must assure itself that OCC "compl[ied] with . . . its own rules."[75] OCC failed to do so. OCC's bylaws require that nonshareholder exchanges "be promptly provided with information that the Executive Chairman considers to be of competitive significance" to them and "be afforded the opportunity to make presentations to the Board of Directors or an appropriate Committee of the Board of Directors."[76] Despite the obvious competitive significance of the Plan, it is undisputed that the nonshareholder exchanges were neither notified of its development nor given an opportunity to comment on it. Indeed, there is nothing in the record to indicate that the Executive Chairman made a determination one way or the other or was even aware of this requirement at the time the Plan was being considered.

OCC insists that the bylaws be interpreted to grant the Executive Chairman unfettered and unreviewable discretion to determine whether a proposal is of competitive significance to the nonshareholder exchanges.[77] Such an interpretation effectively would eviscerate the bylaws' protection of nonshareholder exchanges, and the Commission should reject it.[78]

[74] OCC Slideshow at 26.
[75] 15 U.S.C. § 78s(g)(1).
[76] OCC Bylaws, Art. VIIB §§ 1.01–.02, *available at* https://goo.gl/PNrE79.
[77] *See* OCC Slideshow at 39.
[78] *See* Petitioners' Remand Submission at 7–9.

Moving Forward

OCC finally insists that the sky would fall if the Commission were to disapprove the Plan: "The lack of Capital Plan funds not only puts OCC at risk," OCC insists, "but also the broader financial markets."[79] This Chicken Little defense cannot save the unlawful Plan.

As an initial matter, the Plan either complies with the Exchange Act or it does not. It therefore is not clear why the parade of horribles forecasted by OCC is relevant. Indeed, OCC repeatedly and strenuously has opposed any stay of the operation of the Plan at all stages of this proceeding; it should not now be allowed to leverage its success in those efforts into making approval of the Plan a *fait accompli*.

Furthermore, the negative consequences predicted by OCC are wildly overblown, and there are several actions that could be taken to ameliorate them.

First, the Commission could delay effectiveness of its disapproval order for a period of time (say, six months or a year) to allow OCC to develop an alternative. Any concerns about immediate noncompliance with Rule 17Ad-22 therefore are unfounded.

Second, OCC would have a myriad of alternatives it could adopt to replace the Plan.[80] One would be rebuilding capital through retaining fees. Indeed, it is not even clear OCC would need to retain any additional fees. The Plan requires OCC to hold $247 million of equity but, as explained above, Rule 17Ad-22 only requires six months of expenses. Based on 2018 expense projections, this would be approximately $174 million. Net of dividends, the shareholder exchanges have contributed approximately $72 million of capital. If OCC returned this $72 million, it would be left with $175 million in equity, essentially what it needs.

Even if OCC were required to hold $247 million, it could get to that level quickly through retained earnings. Based on this year's projected expenses of $347.6 million, the 33% budget buffer will be $115.9 million. Assuming a tax rate of 21%, OCC could add $91.5 million to capital by retaining earnings this year alone—well above the $72 million the shareholder exchanges have contributed net of dividends. And once OCC hits its capital target, it can go back to refunding 100% of excess fees and paying zero taxes.

Of course, OCC is not restricted to raising capital through retaining fees. Susquehanna has offered to provide it an immediate $150 million, initially at LIBOR + 3% and now at the Federal Funds Rate. OCC protests that this would not be equity,[81] but it could easily be structured to qualify. Even if the shareholder exchanges continue to insist on disallowing other equity investors, Susquehanna could provide the funds to the shareholder exchanges themselves, and the shareholder exchanges could then invest it in OCC as equity. We presume the shareholder exchanges funded their current investment at least in part through loans, and if that presumption is correct all that would change in this scenario is the identity of the lender. And even if that presumption is not correct, such a structure would satisfy the funded by equity requirement.

There are other options OCC could pursue. For example, if it wanted to raise capital through retained earnings but for some reason could not do so quickly enough, the shareholder

[79] OCC Slideshow at 51.
[80] As explained above, Rule 17Ad-22 requires a replenishment capital plan, not replenishment capital on the books. OCC would have substantial flexibility in developing such a plan if the Plan were disapproved. *See* Petitioners' Remand Submission at 21–23.
[81] *See* Letter from Jeffrey B. Korn at 1 (Aug. 29, 2018).

exchanges could provide equity to fill the gap until it was filled by retained fees. Willkie Farr suggested this potential solution in 2015:

> Until the [retained earnings] reach[ ] the initial designated capital level, the SEC could allow a capital contribution by the five owners if deemed absolutely necessary to reach such capital level in the interim, provided that the dividend amount be capped at a much lower rate than the rate the five owners negotiated with OCC's management; and that the capital contribution be withdrawn by the five owners and dividends discontinued once the [retained earnings] reach[ ] the required amount.[82]

Conclusion

What Willkie Farr said in 2015 remains true today: "The SEC should not approve this filing. Instead, the SEC should work with OCC and other market participants to definitively establish the level of funding needed and explore funding alternatives that would not jeopardize the fair and equitable operation of OCC . . . ."[83] Petitioners stand ready to assist the Commission and OCC in that process.

Dated: September 27, 2018

x______________________

David H. Thompson
Cooper & Kirk, PLLC
1523 New Hampshire Avenue, N.W.
Washington, D.C. 20036
[redacted]

[82] Willkie Letter at 10–11.
[83] *Id.* at 1.

BEFORE THE

SECURITIES AND EXCHANGE COMMISSION

In the Matter of	)
The Options Clearing Corporation	) File No. SR-OCC-2015-02
For and Order Granting the Approval of	)
Proposed Rule Change Concerning a Proposed Capital Plan for Raising Additional Capital That Would Support The Options Clearing Corporation's Function as a Systemically Important Financial Market Utility (File No. SR-OCC-2015-02)	)

EXPERT REPORT OF PROFESSOR PETER D. EASTON, Ph.D.

September 24, 2018

Contents

I. Qualifications

1. My name is Peter Easton. I am the Notre Dame Alumni Professor of Accountancy and Director of the Center for Accounting Research and Education at the Mendoza College of Business, the University of Notre Dame. I was first appointed to these positions in 2003.

2. My educational background includes two Bachelor's degrees in Agricultural Science (majoring in Agricultural Economics) in 1973 and Economics in 1978 from the University of Adelaide in Adelaide, Australia. I completed a Diploma of Technical Teaching at the University of South Australia in Adelaide, Australia, in 1978, and a Diploma in Financial Management at the University of New England, in Armidale, Australia, in 1980. I graduated with a Ph.D. in Business Administration (majoring in Accounting and Finance) from the University of California at Berkeley in 1984.

3. In addition to my position on the faculty of the University of Notre Dame, I also serve as a Distinguished Professor at the Limperg Institute in the Netherlands. I have held this position since 2000. Prior to my appointment at the University of Notre Dame, I spent eight years as a chaired professor at The Ohio State University and, prior to that, five years as a chaired professor at Macquarie University in Australia. I have also served on the faculties at the University of Chicago, Booth School of Business, the University of Melbourne, the Graduate School of Business at Seoul National University, the Department of Accounting at the National University of Singapore, the Australian Graduate School of Management, Hong Kong Polytechnic University and the China Europe International Business School.

4. My research focuses on the role of accounting information in securities valuation, with a particular emphasis on estimating the cost of capital. I have published numerous articles in leading peer-reviewed academic accounting journals and five textbooks on accounting and valuation. I am the main author of the textbook: *Financial Accounting for MBAs*, which is now in its seventh edition and relied upon as the principal text for many graduate level courses.

5. In addition to publishing, I have served as Associate Editor for the four leading peer-reviewed academic accounting journals in the United States, as well as the leading peer-reviewed academic accounting journals in Australia, Canada, and Europe. Currently, I am an Editor of the *Review of Accounting Studies*.

6. My teaching, as well as a large part of my consulting activities, involves detailed analysis of financial statements, valuing the assets and liabilities therein, forecasting future financial statements, determining the cost of capital and exploring the link between the financial statements and the value of the underlying entity. The textbook I author on these topics, *Financial Statement Analysis and Valuation*, is now in its fifth edition.

7. Especially pertinent to the above-captioned case:

   a. I have served as a testifying expert and a consulting expert in many litigation matters involving valuation disputes, several of which involved estimating the cost of capital.

   b. I have been qualified as a valuation expert in the Delaware Chancery Court.[1]

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[1] *In re Cede & Co. & Cinerama v. Technicolor Inc.*, C.A. No. 7129 (Del. Ch.) (Deposition testimony August 5, 6, 2002 and April 9, 2003; trial testimony May 21, 22, 2003).

c. I have published an invited monograph: *Estimating the Cost of Capital Implied by Market Prices and Accounting Data.*[2]

8. My curriculum vitae, attached to this report as Appendix A, further details my publications, teaching experience, and expert testimony.

II. Assignment

9. I have been retained by Cooper & Kirk, PLLC to analyze the Expert Report of Marc J. Brown ("the Brown report") in the above captioned matter before the Securities and Exchange Commission (the "SEC"). I have been asked to limit my analysis to the Brown report's discussion of the reasonableness of the expected returns of the Shareholder Exchanges on their investment in Options Clearing Corporation (OCC) under the OCC's proposed Capital Plan.

III. The Shareholder Exchanges' investment in OCC under the proposed Capital Plan

10. OCC is owned equally by five exchanges: Chicago Board Options Exchange Incorporated, International Securities Exchange, LLC, NASDAQ OMX PHLX LLC, NYSE MKT LLC and NYSE ARCA, INC (collectively the "Shareholder Exchanges").[3] The Brown report refers to the "Shareholder Exchanges" as "Stockholder Exchanges."

11. "OCC operates under the SEC's jurisdiction as a Registered Clearing Agency and the Commodity Futures Trading Commission ("CFTC") as a Derivatives Clearing

[2] Peter Easton, *Estimating the Cost of Capital Implied by Market Prices and Accounting Data*, FOUNDATIONS AND TRENDS IN ACCOUNTING (2009).
[3] OCC, 2017 ANNUAL REPORT 2 (2017), *available at* https://goo.gl/oNGhdm.

Organization, and under prudential regulation by the Board of Governors of the Federal Reserve System (the "Federal Reserve") as a systemically important financial market utility ("SIFMU")."[4]

12. In 2014, OCC's Board of Directors approved a plan (the "Capital Plan") to raise capital from the Shareholder Exchanges. Under the Capital Plan, the Shareholder Exchanges contributed $150.0 million in equity capital in March 2015 and also committed to provide additional equity capital of $117.0 million (and up to $200.0 million) if capital falls below certain thresholds. In consideration of these capital contributions and replenishment capital commitments, the Shareholder Exchanges will receive dividends for as long as they remain shareholders and maintain their contributed capital and replenishment capital commitment. The SEC approved the Capital Plan under the Securities Exchange Act of 1934 by delegated authority to the Division of Trading and Markets staff and issued a notice of no-objection under the Dodd-Frank Act by the Commissioners directly. In response to the filing of a petition for review by certain petitioners, the approval order given by the Division of Trading and Markets staff was reviewed by the full Commission and subsequently affirmed in a final order by the Commission in February 2016. The petitioners then filed a Petition for Review of the SEC's final order with the U.S. Court of Appeals for the District of Columbia Circuit, and, after oral argument, the Court issued an opinion on August 8, 2017, finding that the SEC's approval of the Capital Plan was arbitrary and capricious and remanding the matter to the SEC to further analyze the Capital Plan and to engage in the reasoned decision making it had failed to undertake in its initial

[4] *Id.* at 34.

approval order. As a result, the matter is now pending SEC determination once again. From a practical standpoint, the Capital Plan remains in full effect during the remand.[5]

13. Following the remand from the U.S. Court of Appeals to the SEC, OCC retained Marc J. Brown to conduct an analysis of the reasonableness of the expected returns of the Shareholder Exchanges through their investment in OCC under the Capital Plan. The Brown report was filed with the SEC on August 23, 2018.[6]

IV. Summary of Opinions

14. The Shareholder Exchanges' investment in OCC is exceptionally low risk. A number of indicia of risk suggest that a reasonable rate of return is near five percent.

15. The return and expected return on the Shareholder Exchanges' investment in OCC is not commensurate with the riskiness of the investment.

16. The private equity investments to which the Brown report refers are quite different from and much riskier than the Shareholder Exchanges' investment in OCC.

17. The CAPM should not be used to calculate a cost of capital for the Shareholder Exchanges' investment in OCC.

18. Lack of marketability is not a material risk factor for the Shareholder Exchanges' investment in OCC.

V. The Shareholder Exchanges' investment in OCC is exceptionally low risk

19. There are many facts that support the conclusion the Shareholder Exchanges' investment in OCC is exceptionally low-risk.

20. Standard & Poor's observed that the OCC has an "[e]ffective monopoly on clearing

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[5] *Daily Treasury Yield Curve Rates*, U.S. DEP'T OF TREASURY, https://goo.gl/bcd6JZ.
[6] Expert Report of Marc J. Brown, CFA (Aug. 23, 2018) (attached as Exhibit A to Letter from Jeffrey B. Korn, Willkie Farr & Gallagher LLP, to Brent J. Fields, Secretary (Aug. 23, 2018)) ("Brown Report").

equity options," which is a "[c]ritical function in the U.S. capital markets."[7] The OCC's effective monopolization of a critical public function in the U.S. economy gives it tremendous market power. It, therefore, is unsurprising that the OCC has a "[d]emonstrated ability to adjust clearing fees and flexibility to adjust refunds if necessary."[8]

21. Since its creation, the OCC has never needed to access shareholders' equity to meet its operational expenses,[9] and, in fact, the OCC issued substantial refunds during the most trying economic circumstances. For example, the OCC issued refunds of:

- $21,549,000 for 1997, the year of the Asian financial crisis;[10] and
- $64,651,000 and $57,928,000 for 2008 and 2009, respectively, at the height of the global financial crisis.[11]

22. Standard & Poor's provides more evidence that the OCC will continue to be a low risk investment because it will combine its market power with "large economies of scale" and "ample capacity to absorb up to 2.5 times the largest historical trading volumes per day with the current OCC systems."[12]

23. Another indication of the low-risk nature of the shareholder exchanges' investment is the returns provided to equity investors in other clearinghouses. "[W]ith its status as a quasi-monopoly, operating as an industry utility, OCC bears some similarity with U.S. clearinghouses National Securities Clearing Corp. [NSCC] and Fixed Income

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[7] S&P GLOBAL RATINGS, OPTIONS CLEARING CORP. 2 (Dec. 28, 2017) ("S&P Report"), *available at* https://goo.gl/FdF1bo.
[8] *Id*. at 2.
[9] Petitioners' Brief at 7, *Susquehanna Int'l Grp., LLP v. SEC*, No. 16-1061 (D.C. Cir. June 16, 2016).
[10] OCC, 1999 ANNUAL REPORT 24 (1999), *available at* https://goo.gl/3xXj9a.
[11] OCC, 2010 ANNUAL REPORT 34 (2010), *available at* https://goo.gl/UdCtj1.
[12] S&P Report at 3.

Clearing Corp. [FICC].”[13]

24. The Depository Trust and Clearing Corporation (DTCC) owns 100 percent of the stock in both NSCC and FICC. Neither stock pays dividends.[14] The DTCC itself has issued common stock and several series of preferred stock. Only one pays a dividend—the Series C Preferred Stock. That stock was issued in 2015. Through June 15, 2020, it pays a dividend at a fixed rate of 4.875 percent per year; after that, dividends will accrue at a rate equal to three-month Libor plus 3.167 percent, currently approximately 5.5 percent.[15]

25. Additional market data supports the classification of the shareholder exchanges' investment as exceedingly low-risk. For example, the OCC's Standard & Poor's rating is AA+/Stable—the same as the rating for the sovereign debt of the United States, and a rating enjoyed by only one percent of the over 9,000 global entities rated by Standard & Poor's.[16] Ten-year T-bills currently return around three percent.[17] In addition, Susquehanna International Group has offered to provide the OCC with up to $150 million in capital at the Federal Funds Rate—which has been two percent or lower for the past decade.[18]

26. Taken together, these indicia of low risk suggest that a reasonable rate of return on the Shareholder Exchanges' investment in OCC is near five percent.

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[13] *Id*. at 5.
[14] *See* NSCC, 2017 CONSOLIDATED FINANCIALS 2, *available at* https://goo.gl/HFHkLi; FICC, 2017 CONSOLIDATED FINANCIALS 2, *available at* https://goo.gl/q5dfLm.
[15] *See* DTCC, 2017 CONSOLIDATED FINANCIAL STATEMENT 43, *available at* https://goo.gl/E9m7Xe.
[16] *See* S&P Report at 10; Press Release, OCC Press Release, Aug. 22, 2018, *available at* https://goo.gl/q1JPuK.
[17] *See Daily Treasury Yield Curve Rates*, U.S. DEP'T OF TREASURY, https://goo.gl/bcd6JZ (2.97 percent as of September 13, 2018).
[18] *See* Letter from David H. Thompson, Cooper & Kirk, PLLC, to Brent Fields, Secretary, SEC at 1 (Aug. 24, 2018); *Effective Federal Funds Rate*, FRED, https://goo.gl/RPsuFJ.

VI. The return and expected return on the Shareholder Exchanges' investment in OCC is not commensurate with the riskiness of the investment.

27. The Shareholder Exchanges have been paid nearly $78 million in dividends on their $150 million investment in OCC in just three years under the Capital Plan.[19] Further, the Shareholder Exchanges will receive an estimated additional $45.8 million dividend for 2018.[20] Thus, it is likely that they will have been paid back more than the investment of $150 million in just five years. This realized return and the expected return under the Capital Plan is far in excess of the five percent rate that is commensurate with the very low risk associated with the Shareholder Exchanges' OCC investment.

VII. Private Equity Investments are Much Riskier than the Shareholder Exchanges' Investment in OCC

28. The Brown report compares the Shareholder Exchanges' investment in OCC to "typical private equity investments." The Brown report does not define or describe "typical private equity investments,"[21] rather it refers to a survey ("the survey") of 79 private equity investors[22] who invest in entities that are substantially different and much riskier than the OCC. I will refer to these firms as the "surveyed private equity firms."

29. The surveyed private equity firms are primarily buyout and growth equity investors. Over 90 percent invest in buyouts while almost 75 percent invest in growth equity.

[19] *See* Letter from David H. Thompson to Brent Fields at 2 (Apr. 13, 2018).
[20] Brown Report ¶ 33.
[21] *Id.* ¶ 23.
[22] Paul Gompers, Steven N. Kaplan, & Vladimir Mukharlyamov, What Do Private Equity Firms Say They Do?, (Harv. Bus. Sch., Working Paper No. 15-081, 2015), https://goo.gl/tXjejf.

These percentages sum to more than one because many surveyed private equity investors invest in both buyouts and growth equity. A minority of the surveyed private equity investors, particularly the older and larger ones, also invest in distressed investments and private investments in public equities ("PIPEs").[23] The surveyed private equity investors said that their target internal rate of return ("IRR") is 25 percent.[24] The evidence below clearly establishes that the risk inherent in investing in these types of private equity assets is much higher than the risk inherent in the Shareholder Exchanges' investment in the mature, stable, monopolistic, AA+ rated OCC. The survey does not ask for information on realized rates of return, which may also be viewed as an indicator of the riskiness of the private equity investment.

30. The range of realized returns on private equity investments indicates that private equity investments are quite risky. The well-known textbook, *International Private Equity* by Eli Talmor and Florin Vasvari ("Talmor and Vasvari"), reports IRRs for private equity funds for the years 1990 to 2007.[25] The calculation of the IRR is based on contributions to the fund and distributions from the fund prior to the year-end and the estimated Net Asset Value at year-end. The range of IRRs for Venture funds, worldwide was -100 percent (that is, total loss) to 514.3 percent (that is, a huge gain). In ten of these years, more than 25 percent of the venture capital private equity funds had a negative IRR and in six of these years, more than 50 percent had a negative IRR.[26] Talmor and Vasvari also report that the range of IRRs for buyout funds in the

[23] *Id*. at 11.
[24] *Id*. at 16.
[25] ELI TAMOR FLORIN VASVARI, INTERNATIONAL PRIVATE EQUITY (2011).
[26] *Id*. at 9.

United States for these years was -76.7 percent to 147.4 percent. In 14 of these years more than 25 percent of the U.S. buyout private equity funds had a negative IRR and in two of these years more than 50 percent had a negative IRR.[27] The statistics in Talmor and Vasvari are based on the Preqin Private Equity Online data.

31. I have calculated the IRR for all (432) U.S. private equity funds on the Preqin Private Equity Online database that were liquidated in the years 2002 to 2014.[28] This IRR is based on the contributions to and distributions from the initiation of the fund through liquidation. The range of IRRs was from -44.6 percent to 563.2 percent, the mean IRR was 14 percent, the median was 9.4 percent, and 25 percent of the IRRs were negative.[29] Again, this distribution of realized returns is evidence that private equity investments are much riskier than the low risk Shareholder Exchanges' investment in OCC.

VIII. The CAPM should not be used to calculate a cost of capital for the Shareholder Exchanges' investment in OCC.

32. The core assumption of the CAPM is that investors hold a diversified portfolio. This was clearly stated in the Nobel prize winning 1964 paper by William Sharpe: *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*[30] and it was underscored by two other Nobel prize winners, Eugene Fama and Merton Miller in their book published in 1972: *The Theory of Finance*.[31] The Shareholder Exchanges

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[27] *Id*. at 12.
[28] Peter Easton, Stephannie Larocque, & Jennifer Stevens, *Private Equity Valuation Before and After ASC 820*, (CARE, Working Paper 2018).
[29] *Id*. Table 1, Panel C.
[30] William Sharpe, Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk, 19 J. OF FINANCE 425 (1964).
[31] EUGENE FAMA MERTON MILLER, THE THEORY OF FINANCE (1972).

primarily invest in assets and activities associated with the trading of securities. Their portfolio of assets is, by no means, diversified.

33. The Shareholder Exchanges do not hold a diversified portfolio. This is evident in, for example, the assets owned and operated by Chicago Board Options Exchange Incorporated ("CBOE"). In the past three years, the CBOE expanded its options exchange operations by purchasing Bats, Vest, Silexx, and Livevol. The goodwill and intangible assets associated with these acquisitions are recorded on the CBOE 2017 Balance Sheet at $4,774.8 million, which is 87 percent of CBOE's total assets of $5,265.7 million.[32] Each of these acquisitions are of assets that expand operations of the options exchange rather than diversifying into less related types of operations.

IX. Lack of marketability is not a material risk factor for the Shareholder Exchanges' investment in OCC.

35. The Brown report claims that an important risk factor for the Shareholder Exchanges investment in OCC is a severe lack of marketability for that investment.[33] But, the arguments provided in the Brown report do not support this conclusion. I will list each of the arguments in the Brown report and then note that they do not support his conclusion.

36. The Brown report states:

> ". . . the Capital Contribution is regulatory capital and cannot be removed unless it is replaced by other equity regulatory capital."[34]

[32] CBOE Global Markets, Inc., SEC Form 10-K, December 31, 2017 at 56, *available at* https://goo.gl/JEFksJ.
[33] Brown Report at 7.
[34] *Id*. ¶ 31.

Regulatory capital is an operating asset of OCC. Like operating assets of most going concerns, they cannot be removed unless they are replaced by other operating assets. This does not, however, affect the marketability of the going concern. Just as OCC cannot operate without regulatory capital, an airline cannot operate without airplanes but this fact does not in-and-of-itself affect the marketability of the airline.

37. The Brown report states:

> "…the Stockholder Exchanges are constrained from selling their positions in the OCC since potential purchasers are limited and OCC and the other Equity Stockholders have a right-of-first-refusal."[35]

and

> "…the prospect for exiting the investment is very limited as is the pool of potential buyers."[36]

This constraint can clearly be waived and the prospects do not appear to be very limited. A recent Wall Street Journal article reported:

> "…the NYSE recently considered selling its stake in OCC, according to people with knowledge of the matter. The Depository Trust & Clearing Corp., a clearinghouse for stocks and bonds, approached the OCC about a potential merger, but those talks have since cooled, according to the people."[37]

This article indicates that potential buyers exist. Moreover, for argument's sake, even if the investment were not as marketable as other investments due to any of the referenced restrictions, that does not make the investment itself in a AA+ rated monopoly of a crucial market function risky.

38. The Brown report states:

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[35] *Id.* ¶ 31.
[36] *Id* ¶ 33.
[37] Gunjan Banerji, *A Messy Battle Brews in the Options Market*, WALL ST. JOURNAL (Aug. 22, 2018), https://goo.gl/taJUkT.

> "Practically speaking, unlike other potential investments, the Stockholder Exchanges are only able to get their respective capital invested back through the Dividends."[38]

There is no evidence that the Shareholder Exchanges could not get their capital investment back through a sale of OCC. This likewise does not affect the riskiness of the investment; nor does it mean that the dividends could not be capped at a reasonable rate.

39. The Brown report states:

> "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."[39]

The claim that "the discrete discounted annual Dividend payments over a 10-year horizon are not expected to cover the capital invested" is not consistent with the evidence. The Shareholder Exchanges have been paid nearly $78 million in dividends on their $150 million investment in OCC in just three years under the Capital Plan.[40] Further, the Shareholder Exchanges will receive an estimated additional $45.8 million for 2018.[41] Thus, it is likely that they will have been paid back more than the investment of $150 million in just five years.

Further, this argument presents a false dichotomy. The level of riskiness for an investment is not a binary choice between "sure monies" and not "sure monies". An

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38 Brown Report ¶ 31.
39 *Id*. ¶ 33.
40 *See* Letter from David H. Thompson to Brent Fields at 2 (Apr.13, 2018).
41 Brown Report ¶ 33.

investment in a AA+ rated monopoly of a crucial market function is very secure for a private investment.

40. The Brown report states:

> "…as a non-profit-maximizing firm, the growth prospects and typical expected equity upside are low."[42]

The modest 2.3 percent long-term annual budget growth projected for operating expenses used by OCC in proposing the Capital Plan allowed the plan to appear far less onerous than had OCC instead used a percentage growth rate reasonably related to the actual double-digit growth rate it experienced in the two years immediately prior.[43] The growth rate for operating expenses during the first four years of the Capital Plan will reach an average of approximately 15 percent per year by the end of 2018.[44] As large budget operating increases compound each year at OCC, the over 30 percent estimated dividend rate-of-return for 2018 will grow exponentially in coming years. Even if OCC experiences a significant drop in operating expense growth to 10 percent, taking OCC's projected expenses of $347.6 million for 2018 and extrapolating out over the next three years at that 10 percent annual operating budget growth rate, the rate-of return reflected in the dividend by that third year will approximate 40 percent. Having the ability to increase fees dramatically on a captive user base allows OCC the leverage to realize gains of these sizes for the dividends.

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[42] *Id.* ¶ 31.
[43] OCC Brief in Support of Motion to Lift Stay at 9 (Apr. 13, 2015)
[44] OCC, 2015 ANNUAL REPORT (2015), https://goo.gl/6qSsNN; OCC, 2016 ANNUAL REPORT (2016), https://goo.gl/aLVS9G; OCC, 2017 ANNUAL REPORT, https://goo.gl/3xnfnr. In regards to the 2018 budget, see The Options Clearing Corporation's Submission in Support of the Proposed Change to its Schedule of Fees at 10 (Mar. 27, 2018).

X. Conclusion

41. The Shareholder Exchanges investment in OCC is exceptionally low risk. Thus an annual return of five percent of the $150 million invested ($7.5 million) would represent a reasonable rate of return. The Brown report, which argues for a higher rate of return, is based on inappropriate comparison to higher risk private equity investments, flawed use of the CAPM and unsupported claims of lack of marketability.

Peter Easton

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Peter D. Easton
September 24, 2018

APPENDIX A

PETER D. EASTON

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EDUCATION

Ph.D.	1984	University of California, Berkeley
Dip. Fin. Mgmt.	1980	University of New England
Dip. T. Tech.	1978	University of South Australia
B.Ec.	1978	University of Adelaide
B.Ag.Sc.	1973	University of Adelaide

ACADEMIC AND PROFESSIONAL EXPERIENCE

Notre Dame Alumni Professor of Accountancy and Director, Center for Accounting Research and Education, Mendoza College of Business, University of Notre Dame, 2003 - present

Distinguished Professor, Limperg Institute, The Netherlands, 2000 – present

Member, Academic Advisory Board, Northern Trust Global Investments, 2004 - 2017

Visiting Professor, University of Adelaide, 2014 – 2016

Visiting Professor, University of New South Wales, 2013 - 2014

Visiting Professor, University of Technology, Sydney, 2010 – 2013

Visiting Professor, Graduate School of Business, Seoul National University, 2008, 2009

Tang Peng Yeu Visiting Professor, Department of Accounting, National University of Singapore, 2009

Professorial Fellow, University of Melbourne, Australia, 1998 - 2009

Visiting Professor of Accounting, Graduate School of Business, University of Chicago, 1988-2002 and 2007-2008

ACADEMIC AND PROFESSIONAL EXPERIENCE (CONTINUED)

John J. Gerlach Professor of Accounting, Fisher College of Business, The Ohio State University, 1995-2003

Price Waterhouse Professor of Accounting and Finance, Macquarie University, Australia, 1988-1995

Visiting Professor of Accounting, Australian Graduate School of Management, 1991

Assistant Professor of Accounting, Graduate School of Business, University of Chicago, 1983-1988

Teaching Associate, University of California, Berkeley, 1979-1983

Lecturer, School of Accountancy, South Australian Institute of Technology, 1975-1979

Lecturer, South Australian Department of Further Education, 1973-1975

BOOKS

Valuation Using Financial Statements: (with Greg Sommers). Cambridge Business Publishers LLC, Chicago. First Edition, 2019.

Financial Statement Analysis and Valuation, (with Mary Lea McAnally, Greg Sommers, and Xiao-Jun Zhang). Cambridge Business Publishers LLC, Chicago. First Edition, 2008, Second Edition, 2010, Third Edition, 2013, Fourth Edition, 2015, Fifth Edition, 2018.

Financial Accounting for MBAs, (with John Wild, Robert Halsey, and Mary Lea McAnally). Cambridge Business Publishers LLC, Chicago. First Edition, 2003, Second Edition, 2005, Third Edition 2008, Fourth Edition, 2010, Fifth Edition 2013, Sixth Edition, 2015, Seventh Edition, 2018.

Financial and Management Accounting for MBAs, (with Robert Halsey, Mary Lea McAnally, Al Hartgraves and Wayne Morse). Cambridge Business Publishers LLC, Chicago. First Edition, 2008, Second Edition, 2010, Third Edition, 2013, Fourth Edition, 2015, Fifth Edition 2018.

Financial Accounting, (with Thomas Dyckman and Glenn Pfeiffer). Cambridge Business Publishers LLC, Chicago. 2007.

RESEARCH PAPERS

"Changes in Financial Accounting for Lease Transactions will not affect Equity Valuation" (with Greg Sommers), *CPA Journal*, June 2018.

"The Market Reaction to Bank Regulatory Reports" (with Brad Badertscher and Jeff Burks), *Review of Accounting Studies,* 23, 2: 686-731, 2018.

"Earnings Forecasts: When the Median is Better than the Average" (with Peter Kelly and Andreas Neuheirl), CARE working paper, 2018.

"Accounting Conservatism and Free Cash Flow" (with Peter Vassallo and Eric Weisbrod), CARE working paper, 2018.

"Private Equity Valuation Before and After ASC 820" (with Stephannie Larocque and Jennifer Sustersic Stevens), CARE working paper, 2018.

"Does SEC Form 8-K Provide Information Necessary or Useful for the Protection of Investors?" (with Azi Ben-Rephael, Zhi Da, and Ryan D. Israelsen), CARE working paper, 2018.

"Two Different Ways of Treating Corporate Cash in FCF Valuations—and the Importance of Getting the Cost of Capital Right" *Journal of Applied Corporate Finance*, 29, 3: 71-77, 2017.

"Mixing Fair-Value and Historical-Cost Accounting: Measurement of Interest Income and Holding Gains/Losses on Available-for-Sale Debt Securities" (with Xiao-Jun Zhang), *Review of Accounting Studies,* 22, 4: 1732-1760, 2017.

"Estimating the Cost of Capital using Stock Prices and Near-term Earnings Forecasts" *Journal of Applied Corporate Finance*, 28, 3: 87-94. Reprinted in *Management Accounting eJournal,* 8, 52, 2016.

"Financial Reporting: An Enterprise Operations Perspective" *Journal of Financial Reporting*, 1, 1: 143-152, 2016.

"Review of Recent Research on Improving Earnings Forecasts and Evaluating Accounting-based Estimates of the Expected Rate of Return on Equity Capital" (with Steve Monahan), special issue of *Abacus* on Financial Statement Analysis and Valuation, 52,1: 35-58, 2016.

"The Expected Rate of Return on Equity Capital Implied by Analysts' Forecasts of Earnings and Target Prices" (with Zhi Da and Keejae Hong), CARE working paper, 2016.

RESEARCH PAPERS (CONTINUED)

"Conservative Accounting and the Realization of Holding Gains and Losses on Available-for-sale Securities" (with Mingyue Dong and Xiao-Jun Zhang), CARE working paper, 2015.

"The Market Pricing of Other-than-Temporary-Impairments," (with Brad Badertscher and Jeffrey Burks), *The Accounting Review,* 89, 3: 811-838, 2014.

"Dissecting Earnings Recognition Timeliness," (with Ryan Ball), *Journal of Accounting Research:* 2013: 1099-1132.

"Selecting an Accounting-based Valuation Model," (with Woo-Jin Chang, Wayne Landsman and Steve Monahan), CARE working paper, 2013.

"A Convenient Scapegoat: Fair Value Accounting by Commercial Banks during the Financial Crisis," (with Brad Badertscher and Jeffrey Burks), *The Accounting Review*, 2012: 59-90. Financial Accounting and Reporting Section American Accounting Association Best Paper Award for 2013.

"Pre-earnings Announcement Drift," (with Pengie Gao and Pengqin Gao), CARE Working paper, 2011.

"What Drives Stock Price Movement? Short-term and Long-term Cash Flows and Implied Expected Rates of Return," (with Zhi Da and Keejae Hong), CARE Working paper, 2011.

"Another Look at Enterprise and Equity Valuations Using Multiples," (with Mingcherng Deng and Julian Yeo), CARE Working paper, 2010.

"Earnings Management? Erroneous Inference Based on Earnings Frequency Distributions," (with Cindy Durtschi), *Journal of Accounting Research*: 2009: 1249-1282.

"Initial Evidence on the Role of Earnings in the Bond Market," (with Steven Monahan and Florin Vasvari), *Journal of Accounting Research*: 2009: 721-766.

"Discussion of Accounting Data and Value: the Basic Results," *Contemporary Accounting Research*: 2009: 261-272.

"Price-convexity, Debt-related Agency Costs, and Timely Loss Recognition," (with Valeri Nikolaev and Laurence van Lent), CARE Working paper, 2009.

"Are Capital Expenditures, R&D, Advertisements and Acquisitions Positive NPV?" (with Peter Vassallo), CARE Working paper, 2009.

RESEARCH PAPERS (CONTINUED)

"Estimating the Cost of Capital Implied by Market Prices and Accounting Data," *Foundations and Trends in Accounting*, 2007: 241-364 (published in 2009).

"Top Level Executive Characteristics and Earnings Attributes," (with Yuping Jia and Laurence van Lent), Working paper, University of Notre Dame, 2008.

"Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts," (with Greg Sommers), *Journal of Accounting Research,* 2007: 983-1016.

"Use of Forecasts of Earnings to Estimate and Compare Cost of Capital Across Regimes," *Journal of Business, Finance, and Accounting,* 2006: 374-394.

"An Evaluation of Accounting Based Measures of Expected Returns," (with Steve Monahan), *The Accounting Review*, 2005: 501-538.

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"Accounting for Asset Retirement Obligations," (with Mimi Alciatore and Carol Dee), Working paper, The University of Notre Dame, 2005.

"Accounting Conservatism and the Relation between Returns and Accounting Data," (with Jinhan Pae), *Review of Accounting Studies*, 2004: 495-522.

"Changes in Environmental Regulation and Reporting: The Case of the Petroleum Industry from 1989 to 1998," (with Mimi Alciatore and Carol Dee), *Journal of Accounting and Public Policy*, 2004: 295-304.

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"PE ratios, PEG ratios, and Estimating the Implied Expected Rate of Return on Equity Capital," *The Accounting Review*, 2004: 73-96.

"Discussion of Forward versus Trailing Earnings in Equity Valuation," *Review of Accounting Studies*, 2004: 331-336.

RESEARCH PAPERS (CONTINUED)

"Discussion of The Predictive Value of Expenses Excluded from 'Pro Forma' Earnings," *Review of Accounting Studies*, 2003: 175-183.

"Scale and the Scale Effect in Market-Based Accounting Research," (with Greg Sommers), *Journal of Business, Finance, and Accounting*, 2002: 25-56.

"Using Forecasts of Earnings to Simultaneously Estimate Growth and the Rate of Return on Equity Investment," (with Pervin Shroff, Gary Taylor and Theodore Sougiannis), *Journal of Accounting Research*, 2002: 657-676.

"Discussion of Factors Associated with Differential Market Reactions to NYSE Versus NASDAQ Firm's Earnings Announcements," *Journal of Business, Finance, and Accounting*, 2001: 1109-1113.

"Economic Value Added and Accounting Value Added," *Review of Accounting Studies*, 2001: 267-274.

"Permanent and Transitory Earnings, Accounting Recognition Lag and the Earnings Coefficient," (with Pervin Shroff and Gary Taylor), *Review of Accounting Studies*, 2000: 281-300.

"Accounting for the Impairment of Long-Lived Assets: Evidence from the Petroleum Industry," (with Mimi Alciatore and Nasser Spear), *Journal of Accounting and Economics*, 2000: 151-172.

"Forecasts of Profitability and the Pricing of Shares: Is the Dow Jones Industrial Average Over-priced?" *Maandblad voor Accountancy en Bedrijfseconomie*, 2000: 49-54.

"Security Returns and the Value-Relevance of Accounting Data," *Accounting Horizons*, 2000: 399-412.

"Discussion of Revalued Financial, Tangible, and Intangible Assets: Association with Share Prices and Non Market-Based Value Estimates," *Journal of Accounting Research*, 1998: 235-247.

"Discussion of Valuation of Permanent, Transitory and Price-Irrelevant Components of Reported Earnings," *Journal of Accounting, Auditing and Finance*, 1998: 337-349.

"Asset Write Downs: A Decade of Research," (with Mimi Alciatore, Carol Callaway Dee and Nasser Spear), *Journal of Accounting Literature*, 1998: 1-39.

RESEARCH PAPERS (CONTINUED)

"The Relevance of Asset Revaluations over an Economic Cycle," (with Peter Eddey), *Australian Accounting Review*, 1997: 22-30.

"Use of Comparisons of Patterns of Stock Return and Accounting Data in Understanding Apparently Anomalous Returns to Accounting-based Trading Strategies," *Contemporary Accounting Research*, 1997: 137-152.

"A Comparison of Cash Flows and Earnings in the Oil and Gas Industry," (with Mimi Alciatore and Nasser Spear), Working paper, 1997.

"The Argument for Earnings: How Earnings Take Their Place in Picking Stocks," *JASSA*, 1996: 22-26.

"The Relation between Security Returns and Accounting Earnings," (with Garry Hobbes), Working paper, 1995.

"The Prediction of Stock Returns Using Analysts' Consensus Forecasts of Earnings," (with Egon Kalotay and Samantha Sin), Working paper, 1994.

"An Investigation of Revaluations of Tangible Long-lived Assets," (with Peter Eddey and Trevor Harris), *Journal of Accounting Research*, 1993: 1-38.

"SEC Form 10K/10Q Reports and Annual Reports to Shareholders: Reporting Lags and Squared Market Model Prediction Errors," (with Mark Zmijewski), *Journal of Accounting Research*, 1993: 113-129.

"Accounting Earnings Can Explain Most of Security Returns: the Case of Long Event Windows," (with Trevor Harris and James Ohlson), *Journal of Accounting and Economics*, 1992: 119-142.

"Empirical Evidence on the Relevance of Earnings and Book Value of Owners' Equity in Security Valuation" (with Trevor Harris), Working paper, Macquarie University, 1991.

"The Stock Market's Perception of Accounting Information," *Australian Accounting Review*, 1991: 20-28.

"Earnings as an Explanatory Variable for Returns," (with Trevor Harris), *Journal of Accounting Research*, 1991: 19-36.

RESEARCH PAPERS (CONTINUED)

"On the Estimation of Earnings Response Coefficients", (with Mark Zmijewski), Working Paper, University of Chicago, 1989, presented at the American Finance Association meetings, New York, December 1988 and at the American Accounting Association meetings, Honolulu, August 1989.

"Cross-sectional Differences in the Market Response to the Announcement of Accounting Earnings," (with Mark Zmijewski), *Journal of Accounting and Economics*, 1989: 117-141.

"Joint Estimation of Several Random Coefficient Models," presented at the American Accounting Association meetings, Cincinnati, August 1987.

"Accounting Earnings and Security Valuation: Empirical Evidence of the Fundamental Links", *Journal of Accounting Research*, 1985: 54-77.

JOURNAL EDITORIAL ACTIVITIES

Review of Accounting Studies, Associate Editor, 1994 – 2003 and Editor, 2003 - present
Accounting and Business Research, Associate Editor, 1995 - present
Accounting and Finance, Associate Editor, 2000 - present
Journal of Business, Finance and Accounting, Associate Editor, 2000 - present
Journal of Accounting, Auditing and Finance, Associate Editor, 2000 – present
Journal of Accounting Research, Associate Editor, 1997 - 2017
Contemporary Accounting Research, Associate Editor, 1998 - 2007
Journal of Accounting and Economics, Associate Editor, 1994 - 2003
Accounting Horizons, Associate Editor, 1994-1996, 1997- 2001
Accounting Review, 1988-90
Accounting Forum, 1979-85

AD HOC REVIEWER

Abacus, Accounting Review, Australian Journal of Management, British Accounting Review, Econometrica, Economic Enquiry, Journal of Accounting and Public Policy, Journal of Business Journal of Econometrics, Journal of Empirical Finance, Journal of Finance, Marketing Science, Review of Financial Studies

PH.D. COMMITTEE MEMBERSHIP (completed dissertations)

John R.M. Hand and Messod D. Berneish, University of Chicago
Sue Wright, Macquarie University
Julian Yeo and Yahya Al Jabr, University of Melbourne
Kirsten Anderson, Tae Hee Choi, Greg Sommers, Gary Taylor, David Hyland, John Griffin, and Keji Chen, The Ohio State University
Valeri Nikolaev, Stephan Hollander, Edith Yeung, and Yuping Yia, Tilburg University
Arnt Verriest, Catholic University of Leuven

AWARDS AND HONORS

Thought Leader, China Europe International Business School, 2018
Don Trow Visiting Fellow, Victoria University of Wellington, 2014, 2015
Financial Accounting Reporting Section, American Accounting Association Best Paper, 2013
Notre Dame Faculty spotlight, the University of Notre Dame, 2011
Honored Research Faculty, the University of Notre Dame, 2010
William and Mary Ann Arthur Dean's Innovation Award, The Ohio State University, 2001
MBA Finance Association Outstanding Teaching Award, The Ohio State University, 1999
Pace Setter Outstanding Graduate Teaching Award, The Ohio State University, 1999
University of Melbourne, Silver Medal, 1998
Australian Research Council Grants, 1991-93, 1993-95, 1994-96
Macquarie University Research Grants, 1989, 1990, 1991, 1992, 1993, 1994
Accounting and Auditing Directorate Grant, 1993
SEC and Financial Reporting Institute Research Fellowship, 1986
American Accounting Association Doctoral Consortium Fellow, 1982
Ernst and Whinney Doctoral Dissertation Award, 1982
Anson Herrick/Arthur Young and Co. Fellowship, 1981
University of California Graduate Assembly Outstanding Teaching Award, 1980
University of California Professional Accounting Program Fellowship, 1980
University of California Teaching Fellowship, 1979
Australian Institute of Agricultural Science Medal, 1973

CONSULTATIONS AND EXECUTIVE EDUCATION

Cornerstone Research
Analysis Group
NERA Economic Consulting
Charles River Associates
Navigant Economics
Chicago Partners LLC
Bain and Company
Barclays Australia Investment Services
IBM (Australia)
Price Waterhouse (Chicago, London, and Sydney offices)
Tyco Investments (Australia)
Voortgezette Educatie Registeraccountants (The Netherlands)

LITIGATION CONSULTATIONS

In re Schultz et al. vs. Sinav Ltd. et al. Case no. 2014 L 15 in the Circuit Court for the Fifteenth Judicial Circuit Ogle County, Illinois. Testifying expert for the defendant.

In re Jeffrey Schulein et al v. Petroleum Development Corporation and DP Merger Sub LLC, Case No. SACV 11-1891 AG (ANx), United States District Court. Testifying expert for the Defendant.

In re National Integrity vs. Countrywide. Testifying expert for the Defendant, Bank of America.

In re Belgium and Dutch Prosecutor vs. BNP Paribus. Testifying expert for the Defendant.

In re W. Norman Scott v. Zimmer Inc., Case No.: 51 122 721 10, American Arbitration Association, Chicago Illinois. Testifying expert for the Claimant.

In re Bank of America, et al. v. Bear Stearns Asset Management Inc. et al. Civil Action no. 08 Civ. 9265 (PAC) ECF Case in the Southern District of New York, United States District Court. Testifying expert for the Defendant.

In re Apparel Sales, Inc. v. Cellcards of Illinois, LLC and Coinstar, Inc. Testifying expert for the Defendant.

In re Chevron USA application for change in assessment 2007, 2008, and 2009 in the Contra Costa County Assessment Appeals Board. Testifying expert on behalf of the Taxpayer.

In re Constar International Securities Legislation, Master File no 03cv05020 in the United States District Court, Eastern District of Pennsylvania. Testifying expert for the Defendant.

In re David Rogers, et al. v. Baxter International Inc., et al., in the United States District Court for the Northern District of Illinois Eastern Division No 04 C 6476. Testifying expert on behalf of the Defendant.

In re Phoenix Meridian Equity Limited vs. Lyxor Asset Management and Scotia bank and Trust (Cayman) Limited, in the Grand Court of the Cayman Islands Cause No 311 of 2007. Testifying expert on behalf of the Plaintiff.

In re PCS Administration (USA), Inc., Potash Corporation of Saskatchewan., Inc. v. Credit Suisse Securities (USA), LLC, before the Financial Industry Regulatory Authority. Arbitration No. 08-00208. Testifying expert behalf of the Claimant.

LITIGATION CONSULTATIONS (CONTINUED)

In re Shareholders of Affiliated Computer Services, Inc. v. Xerox Corporation and Boulder Acquisition Corp., in the Court of the Chancery of the State of Delaware, Consolidation C.A. No. 4940-VCP. Consulting expert on behalf of the Respondents.

In re Cede & Co and Cinerama v. Technicolor Inc., before the Court of Chancery of the State of Delaware. C.A. No. 7129. Deposition testimony August 5, 6, 2002 and April 9, 2003; trial testimony May 21, 22, 2003. Testified on behalf of the Respondents.

In re Newby et al. v. Enron Corporation Securities Litigation, before the U.S. District Court for the Southern District of Texas. C.A. No. H-01-3624, H-02-4788, G-02-463. Consulting expert acting on behalf of the Defendants, Citigroup.

In re Torchmark Corporation v. KPMG Peat Marwick LLP**.,** before the Circuit Court of Jefferson County, Alabama. Case No. CV 03-3315. Consulting expert acting on behalf of the Defendants.

In re Comptroller of the State of New York and other Class Members v. WorldCom Incorporated Securities litigation, before the U.S. District Court for the Southern District of New York. Master file No. 02 Civ 3288 (DLC). Consulting expert acting on behalf of the Defendants, Lehman Brothers.

In re Parmalat Finanziaria S.p.A. v. Grant Thornton International, before the U.S. District Court for the Southern District of New York. Master file No. 04 Civ 0030 (LAK). Consulting expert acting on behalf of the Defendants.

In re Parmalat Securities Litigation, before the U.S. District Court for the Southern District of New York. Master file No. 04 MD 1653 (LAK). Smith v. Bank of America Corp., et al., Master file No. 06 CV 00383 (LAK). Pappas v. Bank of America Corp., et al., Master file no. 06 CV 03109 (LAK). Testifying expert on behalf of the Defendants, Grant Thornton.

In re Dow Chemical Company v. Shell Oil Company, before the Circuit Court of Cook County, Illinois County Department, Law Division. Civil Action no: 00L13873. Consulting expert for the Defendant.

INVITED PRESENTATIONS

2018

China Europe International Business School, Shanghai; Financial Accounting and Reporting Section, American Accounting Association annual meeting, Austin; Midwest Accounting Research annual conference, Indiana University; *Journal of International Accounting Research* annual conference, Ca' Foscari University, Venice, Italy

2017

Babeș-Bolyai University, Cluj, Romania; Baeur Accounting Research Symposium, Cass Business School; *Journal of, Auditing, and Finance* annual conference, University of Otago; *Journal of Business, Finance, and Accounting* annual Capital Markets conference, Hong Kong Polytechnic University; *Journal of International Accounting Research* annual conference, University of Adelaide: Midwest Finance Association Annual Meetings, Chicago; Limperg Institute, Tilburg University; University of Amsterdam; University of Houston; London School of Economics

2016

CARE conference, Leesburg, Virginia; Joint journal conference of JIAR and AOS, University of Augsburg (plenary speaker); McMaster University Accounting Conference; Methodological and Empirical Advances in Financial Analysis conference, University of Sydney; Shanghai Advanced Institute of Finance; Tilburg University; University of Adelaide; University of Michigan; University of Minnesota Empirical conference; University of Notre Dame

2015

Accounting and Finance Association of Australia and New Zealand annual meetings, Hobart; American Accounting Association annual meetings, Chicago; Business Links, Center for Accounting, Governance and Taxation Research; Dopuch Conference, Washington University, St. Louis; Erasmus University of Rotterdam; George Washington University; INSEAD Accounting Symposium, Singapore; Tilburg University; University of Adelaide; University of Amsterdam; University of Auckland; University of California, Berkeley; University of Lausanne; University of Otago; University of Texas, Dallas; Victoria University of Wellington

2014

Baruch College, City University of New York; CARE conference, Hong Kong; London Business School; Ohio State University; Rutgers University; Tilburg University; University of Illinois, Champaign; University of New South Wales; University of Sydney

INVITED PRESENTATIONS (CONTINUED)

2013

CARE conference, Washington, DC; Duke University; Hong Kong Polytechnic University; University of California, Berkeley; University of Cyprus; University of Missouri, Columbia; University of New South Wales; University of Technology, Sydney; University of Toronto; World Finance Conference, Cyprus

2012

American Accounting Association Financial Accounting and Reporting section mid-year meetings, Chicago; CARE conference, London; Arizona State University; Lancaster University; London Business School; Pennsylvania State University; Tilburg University; University of Iowa; University of North Carolina Tax conference; University of Technology, Sydney

2011

American Accounting Association annual meetings, San Francisco; Brock University; Louisiana State University; London Business School; Tel Aviv University; Tilburg University; University of Iowa; CARE conference, New York; University of Notre Dame; University of Technology, Sydney

2010

Boston University; Brock University; Indiana University; London Business School; Michigan State University; Northwestern University; Tilburg University; Yale University; University of Houston; University of Notre Dame; University of Technology, Sydney; University of Texas, Austin; University of Washington

2009

American Accounting Association annual meetings, New York; Katholieke Universitiet Leuven; Korea Financial Supervisory Commission; Korean Accounting Association; Korean Accounting Standards Board; CARE conference, Singapore; National University of Singapore; Seoul National University; Tilburg University; University of Bocconi; University of Chicago; University of Illinois; University of Melbourne; University of Miami; University of Notre Dame

INVITED PRESENTATIONS (CONTINUED)

2008

Mary; University of Cincinnati 4th Annual Accounting Research Symposium; University of Chicago; Northwestern University; Stanford University Summer camp; Seoul National University; Tilburg University; University of Colorado, Denver; University of Melbourne; University of Notre Dame

2007

American Accounting Association Financial Accounting and Reporting Section Annual Meetings, San Antonio; *Contemporary Accounting Research* 22nd annual conference, Montreal; Baruch College; Limperg Institute; National University of Singapore; Pennsylvania State University; Tilburg University; University of California, Riverside; University of Macedonia; University of Melbourne; University of Notre Dame; University of Texas, Dallas

2006

American Accounting Association Annual Meetings, Washington, DC; Brock University; Dartmouth College; Finance, Economics, and Accounting annual meeting, Georgia State University; Georgetown University; Harvard University; Lancaster University; Limperg Institute; London Business School Summer Symposium; New York University; Tilburg University; Pennsylvania State University; University of Melbourne; University of Minnesota; University of Notre Dame

2005

American Finance Association annual meetings, Philadelphia; American Accounting Association Financial Accounting and Reporting section mid-year meetings, San Diego; Brigham Young University; Drexel University; *Journal of Business, Finance, and Accounting* Capital Markets conference; Limperg Institute; Tilburg University; University of Colorado, Boulder; University of Illinois; University of Melbourne; Fifth Annual Netherlands Accounting Research conference (plenary speaker), Erasmus University; University of Toronto

2004

Arizona State University; Barclays Global Investors; Columbia University; IAAER/SAAA conference, Durbin, South Africa; Finance, Economics, and Accounting annual meeting, University of Southern California; INSEAD; *Journal of Accounting, Auditing, and Finance* conference; Limperg Institute; London Business School; Monash University; Texas A&M University; Plenary speaker, Accounting Research Forum; Tilburg University; University at Buffalo; University of Houston; University of Melbourne; University of Notre Dame

INVITED PRESENTATIONS (CONTINUED)

2003

American Accounting Annual Meetings Honolulu; City University; Plenary Speaker, Irish Accounting and Finance Association Annual Meetings, Tallah; Florida State University, Plenary speaker, Accounting Research Forum, University of Amsterdam; Limperg Institute, The Netherlands; Plenary Speaker Midwest Annual Meetings American Accounting Association; *Review of Accounting Studies* conference; University of Houston; Nederlands Instituut van Registeraccountants; Nyenrode University; University of Notre Dame; University of Rochester; University of Utah Winter Accounting Conference

2002

American Accounting Association Doctoral Consortium, Tahoe Village – Distinguished Faculty Speaker: American Accounting Association annual meetings, San Antonio; Burton Conference, Columbia University; Capital Markets Conference, *Journal of Business, Finance, and Accounting,* Market-Based Accounting Research Conference; CIBER Doctoral Internationalization Consortium, University of Washington; Emory University; George Washington University; Florida State University; Ohio State University; Southern Methodist University; Nyenrode University; *Review of Accounting Studies* conference, University of Michigan; University of Alabama; University of Arizona; University of Groningen, Financial Statement Analysis Conference; University of Southern California; University of Melbourne; University of Notre Dame

2001

Big-10 Doctoral Consortium, University of Michigan; Canadian Accounting Association Doctoral Consortium; Chazen International Valuation Conference, Columbia University; First Annual Winter Accounting Conference, University of Utah; Nyenrode University; Ohio State University; University of Cincinnati; University of Glasgow; Louisiana State University; University of Maryland; University of Massachusetts; University of Minnesota; Virginia Commonwealth University

INVITED PRESENTATIONS (CONTINUED)

2000

American Accounting Association Doctoral Consortium, Tahoe Village – Distinguished Faculty Speaker; American Accounting Association/British Accounting Association Second Globalization Conference, Cambridge – Distinguished International Speaker; Michigan State University; Nederlands Instituut van Registeraccountants, Nyenrode University; Ohio State University; PricewaterhouseCoopers Summer Research Symposium; *Review of Accounting Studies* conference; Stanford University; Texas A&M University; University of Chicago; University of Oregon; University of Iowa; University of Missouri, Columbia; University of Southern California; University of Utah

1999

American Accounting Association Doctoral Consortium, Tahoe Village – Distinguished Faculty Speaker; American Accounting Association/Taiwan Accounting Association First Globalization Conference, Taipei – Distinguished International Speaker; Duke University; *Maandblad voor Accounting en Bedrijfseconomie* conference, Amsterdam – plenary speaker; New York University; University of California, Berkeley; Virginia Tech

1998

American Accounting Association annual meetings, New Orleans; Australian Society of Certified Practicing Accountants; Columbia University; Dartmouth College; Duke University; Hong Kong University of Science and Technology; Kent State University; Ninth Annual Financial Economics and Accounting Conference; Northwestern University; University of Melbourne; University of Notre Dame; Washington University

1997

Baruch College; Indiana University; Massachusetts Institute of Technology; University of Chicago; University of Iowa; University of Pennsylvania (Wharton); Accounting Association of Australia and New Zealand

1996

Carnegie Mellon University; Pennsylvania State University; University of Alabama; University of Texas, Austin

INVITED PRESENTATIONS (CONTINUED)

1992-1995

Accounting Association of Australia and New Zealand Annual Meetings, Darwin and Wollongong; American Accounting Association Annual Meetings, Toronto, Orlando, and San Francisco; American Finance Association Annual Meetings, New York; Australian Banking and Finance Conference, University of New South Wales; Australian Graduate School of Management; British Accounting Association, University of Strathclyde; Columbia University; Duke University; Macquarie University; Monash University; New York University; Northwestern University; The Ohio State University; Southern Methodist University; University of Auckland; University of California, Berkeley; University of California, Los Angeles; University of Chicago; University of Illinois; University of Queensland; University of Michigan, Ann Arbor; University of Southern California; University of Wisconsin, Madison; Vanderbilt University

CERTIFICATE OF SERVICE

I, Harold S. Reeves, counsel for Petitioner Susquehanna International Group, LLP, hereby certify that on September 27, 2018, I served copies of the attached Letter to the Secretary with its attachment on Joseph P. Kamnik, general counsel for the Options Clearing Corporation (OCC) by way of Federal Express, and filed the original and three copies with the Secretary by way of email and Federal Express at the following addresses:

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Dated: September 27, 2018

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