inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number CboeEDGA–2018–001 and should be submitted on or before February 13, 2018.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[12]

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2018–01089 Filed 1–22–18; 8:45 am]

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SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–82522; File No. SR–BatsBZX–2017–34]

Self-Regulatory Organizations; Bats BZX Exchange, Inc.; Notice of Filing of Amendment No. 1 and Order Granting Approval of a Proposed Rule Change, as Modified by Amendment No. 1, To Introduce Cboe Market Close, a Closing Match Process for Non-BZX Listed Securities Under New Exchange Rule 11.28

January 17, 2018.

I. Introduction

On May 5, 2017, Bats BZX Exchange, Inc. (now known as Cboe BZX Exchange, Inc.) (''BZX'' or ''Exchange'') filed with the Securities and Exchange Commission (''Commission''), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act'')[1] and Rule 19b–4 thereunder,[2] a proposed rule change to adopt Bats Market Close, a closing match process for non-BZX Listed Securities. The proposed rule change was published for comment in the **Federal Register** on May 22, 2017.[3] On July 3, 2017, the Commission designated a longer period within which to approve the proposed rule change, disapprove the proposed rule change, or institute proceedings to determine whether the proposed rule change should be disapproved.[4] The Commission received 54 comment letters on the proposed rule change, including a response from the Exchange.[5] On August 18, 2017, the Commission instituted proceedings under Section 19(b)(2)(B) of the Act[6] to determine whether to approve or disapprove the proposed rule change.[7] Thereafter, the Commission received nine more comment letters, including three responses from the Exchange.[8] On

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[12] 17 CFR 200.30–3(a)(12).

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

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 80683 (May 16, 2017), 82 FR 23320 (''Notice'').

[4] *See* Securities Exchange Act Release No. 81072, 82 FR 31792 (July 10, 2017).

[5] *See* Letters to Brent J. Fields, Secretary, Commission, from: (1) Donald K. Ross, Jr., Executive Chairman, PDQ Enterprise, LLC, dated June 6, 2017 (''PDQ Letter''); (2) Edward S. Knight, Executive Vice President and General Counsel, Nasdaq, Inc., dated June 12, 2017 (''Nasdaq Letter 1''); (3) Ray Ross, Chief Technology Officer, Clearpool Group, dated June 12, 2017 (''Clearpool Letter''); (4) Venu Palaparthi, SVP, Compliance, Regulatory and Government Affairs, Virtu Financial, dated June 12, 2017 (''Virtu Letter''); (5) Theodore R. Lazo, Managing Director and Associate General Counsel, SIFMA, dated June 13, 2017 (''SIFMA Letter 1''); (6) Elizabeth K. King, General Counsel and Corporate Secretary, New York Stock Exchange (''NYSE''), dated June 13, 2017 (''NYSE Letter 1''); (7) John M. Bowers, Bowers Securities, dated June 14, 2017 (''Bowers Letter''); (8) Jonathan D. Corpina, Senior Managing Partner, Meridian Equity Partners, dated June 16, 2017 (''Meridian Letter''); (9) Fady Tanios, Chief Executive Officer, and Brian Fraioli, Chief Compliance Officer, Americas Executions, LLC, dated June 16, 2017 (''Americas Executions Letter''); (10) Ari M. Rubenstein, Co-Founder and Chief Executive Officer, GTS Securities LLC, dated June 22, 2017 (''GTS Securities Letter 1''); (11) John Ramsay, Chief Market Policy Officer, Investors Exchange LLC, dated June 23, 2017 (''IEX Letter''); (12) Jay S. Sidhu, Chairman, Chief Executive Officer, Customers Bancorp, Inc., dated June 27, 2017 (''Customers Bancorp Letter''); (13) Joanne Freiberger, Vice President, Treasurer, Masonite International Corporation, dated June 27, 2017 (''Masonite International Letter''); (14) David B. Griffith, Investor Relations Manager, Orion Group Holdings, Inc., dated June 27, 2017 (''Orion Group Letter''); (15) Kieran O'Sullivan, Chairman, President and CEO, CTS Corporation, dated June 28, 2017 (''CTS Corporation Letter''); (16) Sherri Brillon, Executive Vice-President and Chief Financial Officer, Encana Corporation, dated June 29, 2017 (''Encana Letter''); (17) Steven C. Lilly, Chief Financial Officer, Triangle Capital Corporation, dated June 29, 2017 (''Triangle Capital Letter''); (18) Robert F. McCadden, Executive Vice President and Chief Financial Officer, Pennsylvania Real Estate Investment Trust, dated June 29, 2017 (''Pennsylvania REIT Letter''); (19) Andrew Stevens, General Counsel, IMC Financial Markets, dated June 30, 2017 (''IMC Letter''); (20) Daniel S. Tucker, Senior Vice President and Treasurer, Southern Company, dated July 5, 2017 (''Southern Company Letter''); (21) Cole Stevens, Investor Relations Associate, Nobilis Health, dated July 6, 2017 (''Nobilis Health Letter''); (22) Mehmet Kinak, Head of Global Equity Market Structure & Electronic Trading, et al., T. Rowe Price Associates, Inc., dated July 7, 2017 (''T. Rowe Price Letter''); (23) David L. Dragics, Senior Vice President, Investor Relations, CACI International Inc., dated July 7, 2017 (''CACI Letter''); (24) Mark A. Stegeman, Senior Vice President & CFO, Turning Point Brands, Inc., dated July 12, 2017 (''Turning Point Letter''); (25) Jon R. Moeller, Vice Chair and Chief Financial Officer, and Deborah J. Majoras, Chief Legal Officer and Secretary, The Proctor & Gamble Company, dated July 12, 2017 (''P&G Letter''); (26) Christopher A. Iacovella, Chief Executive Officer, Equity Dealers of America, dated July 12, 2017 (''EDA Letter''); (27) Rob Bernshteyn, Chief Executive Officer, Chairman Board of Directors, Coupa Software, Inc., dated July 12, 2017 (''Coupa Software Letter''); (28) Sally J. Curley, Senior Vice President, Investor Relations, Cardinal Health, Inc., dated July 14, 2017 (''Cardinal Health Letter''); (29) Mickey Foster, Vice President, Investor Relations, FedEx Corporation, dated July 14, 2017 (''FedEx Letter''); (30) Alexander J. Matturri, CEO, S&P Dow Jones Indices, dated July 18, 2017 (''SPDJI Letter''); (31) John L. Killea, Chief Legal Officer, Stewart Information Services, dated July 19, 2017 (''Stewart Letter''); (32) M. Farooq Kathwari, Chairman, President & CEO, Ethan Allen Interiors, Inc., dated July 24, 2017 (''Ethan Allen Letter''); (33) Jeff Green, Founder, Chief Executive Officer and Chairman of the Board of Directors, The Trade Desk Inc., dated July 26, 2017 (''Trade Desk Letter''); (34) James J. Angel, Associate Professor, McDonough School of Business, Georgetown University, dated July 30, 2017 (''Angel Letter''); (35) Jon Stonehouse, CEO, and Tom Staab, CFO, BioCryst Pharmaceuticals, Inc., dated July 31, 2017 (''BioCryst Letter''); (36) Peter Campbell, Chief Financial Officer, Mimecast, dated July 31, 2017 (''Mimecast Letter''); (37) Joanne Moffic-Silver, Executive Vice President, General Counsel, and Corporate Secretary, Bats Global Markets, Inc., dated August 2, 2017 (''BZX Letter 1''); (38) David M. Weisberger, Head of Equities, ViableMkts, dated August 3, 2017 (''ViableMkts Letter''); (39) Charles Beck, Chief Financial Officer, Digimarc Corporation, dated August 3, 2017 (''Digimarc Letter''); (40) Elizabeth K. King, General Counsel and Corporate Secretary, NYSE, dated August 9, 2017 (''NYSE Letter 2''); (41) Representative Sean P. Duffy and Representative Gregory W. Meeks, dated August 9, 2017 (''Duffy/Meeks Letter''); (42) Michael J. Chewens, Senior Executive Vice President & Chief Financial Officer, NBT Bancorp Inc., dated August 11, 2017 (''NBT Bancorp Letter''); (43) Barry Zwarenstein, Chief Financial Officer, Five9, Inc., dated August 11, 2017 (''Five9 Letter''); (44) William A. Backus, Chief Financial Officer & Treasurer, Balchem Corporation, dated August 15, 2017 (''Balchem Letter''); (45) Raiford Garrabrant, Director, Investor Relations, Cree, Inc., dated August 15, 2017 (''Cree Letter''); (46) Steven Paladino, Executive Vice President & Chief Financial Officer, Henry Schein, Inc., dated August 16, 2017 (''Henry Schein Letter''); (47) Theodore Jenkins, Senior Director, Investor Relations and Communications, Corbus Pharmaceuticals, Inc., dated August 17, 2017 (''Corbus Letter''); (48) Ari M. Rubenstein, Co-Founder and Chief Executive Officer, GTS Securities LLC, dated August 17, 2017 (''GTS Securities Letter 2''); (49) Cameron Bready, Senior Executive VP, Chief Financial Officer, Global Payments Inc., dated August 17, 2017 (''Global Payments Letter''); (50) Mike Gregoire, CEO, CA Technologies, dated August 17, 2017 (''CA Technologies Letter''); (51) Patrick L. Donnelly, Executive Vice President & General Counsel, Sirius XMHoldings Inc., dated August 17, 2017 (''Sirius Letter''); (52) Theodore R. Lazo, Managing Director and Associate General Counsel, SIFMA, dated August 18, 2017 (''SIFMA Letter 2''); (53) Donald Bollerman, dated August 18, 2017 (''Bollerman Letter''); and (54) Sarah A. O'Dowd, Senior Vice President, Chief Legal Officer and Secretary, Lam Research Corporation, dated August 18, 2017 (''Lam Letter'').

[6] 15 U.S.C. 78s(b)(2)(B).

[7] *See* Securities Exchange Act Release No. 81437, 82 FR 40202 (August 24, 2017) (''OIP''). In the OIP, the Commission specifically requested comment on eight series of questions. *See id.* at 40210–11.

[8] *See* Letters to Brent J. Fields, Secretary, Commission, from: (1) Gabrielle Rabinovitch, VP, Investor Relations, PayPal Holdings, Inc., dated September 12, 2017 (''PayPal Letter''); (2) Edward S. Knight, Executive Vice President and General Counsel, Nasdaq, Inc., dated September 18, 2017 (''Nasdaq Letter 2''); (3) Joanne Moffic-Silver, Executive Vice President, General Counsel, and

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November 17, 2017, pursuant to Section 19(b)(2) of the Act,[9] the Commission designated a longer period for Commission action on proceedings to determine whether to disapprove the proposed rule change.[10] On December 1, 2017, the Exchange filed Amendment No. 1 to the proposed rule change, renaming ''Bats Market Close'' as ''Cboe Market Close.'' [11] This order approves the proposed rule change.

II. Summary of the Proposal

As described in more detail in the Notice,[12] the Exchange proposes to introduce Cboe Market Close, a closing match process for non-BZX listed securities. For non-BZX listed securities, the Exchange's System [13] would seek to match buy and sell Market-On-Close (''MOC'') [14] orders designated for participation in Cboe Market Close at the official closing price for such security published by the primary listing market.

Members [15] would be able to enter, cancel or replace MOC orders designated for participation in Cboe Market Close beginning at 6:00 a.m. Eastern Time up until 3:35 p.m. Eastern Time (''MOC Cut-Off Time'').[16] Members would not be able to enter, cancel or replace MOC orders designated for participation in the proposed Cboe Market Close after the MOC Cut-Off Time.

At the MOC Cut-Off Time, the System would match for execution all buy and sell MOC orders entered into the System based on time priority.[17] Any remaining balance of unmatched shares would be cancelled back to the Member(s). The System would disseminate, via the Bats Auction Feed,[18] the total size of all buy and sell orders matched per security via Cboe Market Close. All matched buy and sell MOC orders would remain on the System until the publication of the official closing price by the primary listing market. Upon publication of the official closing price by the primary listing market, the System would execute all previously matched buy and sell MOC orders at that official closing price.[19]

The Exchange would utilize the official closing price published by the exchange designated by the primary listing market in the case where the primary listing market suffers an impairment and is unable to perform its closing auction process.[20] In addition, proposed Interpretation and Policy .03 specifies that up until the closing of the applicable securities information processor at 8:00 p.m. Eastern Time, the Exchange intends to monitor the initial publication of the official closing price, and any subsequent changes to the published official closing price, and adjust the price of such trades accordingly. If there is no initial official closing price published by 8:00 p.m. Eastern Time for any security, the Exchange would cancel all matched MOC orders in such security.

The Exchange states that it is proposing to adopt Cboe Market Close in response to requests from market participants, particularly buy-side firms, for an alternative to the primary listing markets' closing auctions that still provides an execution at a security's official closing price.[21] Moreover, the Exchange contends that the proposal would not compromise the price discovery function performed by the primary listing markets' closing auctions because Cboe Market Close would only accept MOC orders, and not limit orders, and the Exchange would only execute those matched MOC orders that naturally pair off and effectively cancel each other out.[22]

III. Discussion and Commission Findings

The Commission has carefully reviewed the proposal, including the comments received, and finds that approval of the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to a national securities exchange.[23] In particular, as

Corporate Secretary, Bats Global Markets, Inc., dated October 11, 2017 (''BZX Letter 2''); (4) Elizabeth K. King, General Counsel and Corporate Secretary, NYSE, dated November 3, 2017 (''NYSE Letter 3''); (5) Theodore R. Lazo, Managing Director and Associate General Counsel, SIFMA, dated December 8, 2017 (''SIFMA Letter 3''); (6) Jeffrey S. Davis, Deputy General Counsel, Nasdaq, Inc., dated December 21, 2017 (''Nasdaq Letter 3''); (7) Joanne Moffic-Silver, Executive Vice President, General Counsel, and Corporate Secretary, Cboe Global Markets, Inc., dated January 3, 2018 (''BZX Letter 3''); (8) Joanne Moffic-Silver, Executive Vice President, General Counsel, and Corporate Secretary, Cboe Global Markets, Inc., dated January 12, 2018 (''BZX Letter 4''); and (9) Elizabeth K. King, General Counsel and Corporate Secretary, NYSE, dated January 12, 2018 (''NYSE Letter 4''). All comments on the proposed rule change are available at: *https://www.sec.gov/comments/sr-batsbzx-2017-34/batsbzx201734.htm.* In addition, the Commission's Division of Economic and Risk Analysis (''DERA'') released in the public comment file for this proposal a memorandum setting forth its analysis examining the relationship between the proportion of MOC orders executed off-exchange and closing price discovery and efficiency (''DERA Analysis''). *See* Memorandum to File from DERA, Bats Market Close: Off-Exchange Closing Volume and Price Discovery, dated December 1, 2017 (''DERA Analysis''), available at: *https://www.sec.gov/files/bats_moc_analysis.pdf*; *see also infra* note 129 and accompanying discussion. NYSE Letter 4 included an assessment of the DERA Analysis conducted by D. Timothy McCormick, Ph.D., dated January 11, 2018 (''NYSE Report''). *See* NYSE Letter 4, at 1 and NYSE Report, cover page (stating that the research was funded by NYSE Group). For purposes of this order, statements in the NYSE Report are attributed to NYSE.

[9] 15 U.S.C. 78s(b)(2).

[10] *See* Securities Exchange Act Release No. 82108, 82 FR 55894 (November 24, 2017).

[11] The only change in Amendment No. 1 was to rename the proposed closing match process as Cboe Market Close. Because Amendment No. 1 is a technical amendment and does not materially alter the substance of the proposed rule change or raise unique or novel regulatory issues, Amendment No. 1 is not subject to notice and comment. For purposes of consistency and readability, all references to the proposed closing match process made herein will be to ''Cboe Market Close.''

[12] *See* Notice, *supra,* note 3.

[13] The term ''System'' is defined as ''the electronic communications and trading facility designated by the Board through which securities orders of Users are consolidated for ranking, execution and, when applicable, routing away.'' *See* Exchange Rule 1.5(aa).

[14] The term ''Market-On-Close'' or ''MOC'' means a BZX market order that is designated for execution only in the Closing Auction. *See* Exchange Rule 11.23(a)(15). The Exchange proposed to amend the description of Market-On-Close orders to include orders designated to execute in the proposed Cboe Market Close.

[15] The term ''Member'' is defined as ''any registered broker or dealer that has been admitted to membership in the Exchange.'' *See* Exchange Rule 1.5(n).

[16] Currently, the NYSE designates the cut-off time for the entry of Market At-the-Close Orders as 3:45 p.m. Eastern Time. *See* NYSE Rule 123C. Nasdaq, in turn, designates the ''end of the order entry period'' as 3:50 p.m. Eastern Time. *See* Nasdaq Rule 4754.

[17] As set forth in proposed Interpretation and Policy .02, the Exchange would cancel all MOC orders designated to participate in Cboe Market Close in the event the Exchange becomes impaired prior to the MOC Cut-Off Time and is unable to recover within 5 minutes from the MOC Cut-Off Time. The Exchange states that this would provide Members time to route their orders to the primary listing market's closing auction. Should the Exchange become impaired after the MOC Cut-Off Time, proposed Interpretation and Policy .02 states that it would retain all matched MOC orders and execute those orders at the official closing price once it is operational.

[18] The Bats Auction Feed disseminates information regarding the current status of price and size information related to auctions conducted by the Exchange and is provided at no charge. *See* Exchange Rule 11.22(i). The Exchange also proposed to amend Exchange Rule 11.22(i) to reflect that the Bats Auction Feed would also include the total size of all buy and sell orders matched via Cboe Market Close.

[19] The Exchange would report the execution of all previously matched buy and sell orders to the applicable securities information processor and will designate such trades as ''.P'', Prior Reference Price. *See* Notice, *supra* note 3, at 23321.

[20] *See* proposed Interpretation and Policy .01.

[21] *See* Notice, *supra* note 3, at 23321. The Exchange intends, should the Commission approve the proposed rule change, to file a separate proposal to offer executions of MOC orders at the official closing price, to the extent matched on the Exchange, at a rate less than the fee charged by the applicable primary listing market. The Exchange also intends for such fee to remain lower than the fee charged by the applicable primary listing market. *See id.*

[22] *See id.*

[23] In approving this proposed rule change, the Commission has considered the proposed rule

discussed below, the Commission finds that the proposal is consistent with: Section 6(b)(5) of the Act,[24] which requires that the rules of a national securities exchange, among other things, be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest; and Section 6(b)(8) of the Act,[25] which requires that the rules of a national securities exchange not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.

The Commission received sixty-three comment letters from fifty-two commenters on the proposal, including four response letters from the Exchange.[26]

Price Discovery and Fragmentation

The majority of commenters addressed the potential impacts of the proposal on price discovery in the closing auctions on the primary listing markets. Eight commenters stated that the proposal would not negatively impact price discovery in the primary listing markets' closing auctions.[27] These commenters asserted that because Cboe Market Close would only execute paired MOC orders, and not limit-on-close orders, it would not impede the price discovery mechanisms of the primary listing markets' closing auctions. Five commenters referenced the current Nasdaq and NYSE Arca closing auction processes for securities listed on other exchanges, stating that these competing closing auction processes, which have been permitted by the Commission, may attract limit orders from the primary listing market and impede price discovery, unlike the BZX proposal which is limited to market orders.[28] In addition, five commenters argued that, because BZX will publish the size of matched MOC orders in advance of the primary market's cut-off time, market participants would have available information needed to make further decisions regarding order execution and thus price discovery would not be impaired.[29] Two commenters also asserted that many brokers already provide market-on-close pricing to customers through products that match orders internally, and the proposal may provide incentives for brokers to send such orders to an exchange, thereby increasing transparency, reliability and price discovery at the close.[30]

Thirty-eight commenters stated that the proposal would further fragment the markets and harm price discovery in the closing auctions on the primary listing markets.[31] For example, Nasdaq argued that BZX's MOC orders would be incapable of contributing to price discovery, and instead would further fragment the market by drawing orders and quotations away from primary closing auctions and undermine the mechanisms used to set closing prices.[32] Nasdaq asserted that any attempt to divert trading interest from its closing auction would be detrimental to investors as it would inhibit Nasdaq's closing auction from functioning as intended and would negatively affect the price discovery process and consequently, the quality of the official closing price.[33]

Specifically, Nasdaq expressed concern that the availability of Cboe Market Close could cause a reduction in the number of limit-on-close orders submitted to the primary listing markets' closing auctions, which Nasdaq asserted would harm price discovery at the market close.[34] Nasdaq asserted that the impact of the proposal on the use of limit-on-close orders that may be submitted to NYSE and Nasdaq should be studied and carefully analyzed.[35] In the OIP, the Commission specifically solicited comments on the potential impact of the proposal on the use of limit-on-close orders, including requesting any available data, analyses or studies.[36] In response, Nasdaq explained that reducing MOC orders would impact the behavior of limit orders by reducing the ability of continuous book limit orders and LOC orders to compete with each other and to interact with MOC orders, which it asserted is essential to its closing auction.[37] Specifically, Nasdaq contended that if BZX were to disseminate a paired shares amount at 3:35pm, but Nasdaq published little or

change's impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f). The Commission addresses comments about economic effects of the proposed rule change, including competitive effects, below.

[24] 15 U.S.C. 78f(b)(5).

[25] 15 U.S.C. 78f(b)(8).

[26] *See supra* notes 5 and 8.

[27] *See* PDQ Letter; Clearpool Letter, at 3; Virtu Letter, at 2; SIFMA Letter, at 2; IEX Letter, at 1–2; Angel Letter, at 4; ViableMkts Letter, at 3–4; and Bollerman Letter, at 1. *See also* SIFMA Letter 2, at 1–2.

[28] *See* Clearpool, at 3; IEX Letter, at 2; Angel Letter, at 4; SIFMA Letter 2, at 2; and Bollerman Letter, at 3.

[29] *See* Clearpool Letter, at 3; SIFMA Letter 1, at 2; IEX Letter, at 2; Angel Letter, at 4; ViableMkts Letter, at 3; and SIFMA Letter 2, at 1.

[30] *See* Clearpool, at 3–4; and ViableMkts Letter, at 4–5. One commenter further argued that to the extent BZX accrues market share as a result of the proposal it will likely result from less MOC pairing executed off-exchange. *See* Angel Letter, at 4.

[31] *See* Nasdaq Letter 1; NYSE Letter 1; Bowers Letter; Meridian Letter; Americas Executions Letter; GTS Securities Letter 1; Customers Bancorp Letter; Masonite International Letter; Orion Group Letter; CTS Corporation Letter; Encana Letter; Triangle Capital Letter; Pennsylvania REIT Letter; IMC Letter; Southern Company Letter; Nobilis Health Letter; T. Rowe Price Letter; CACI Letter; Turning Point Letter; P&G Letter; EDA Letter; Coupa Software Letter; Cardinal Health Letter; FedEx Letter; Trade Desk Letter; BioCryst Letter; Mimecast Letter; Digimarc Letter; NYSE Letter 2; NBT Bancorp Letter; Balchem Letter; Cree Letter; Henry Schein Letter; Corbus Letter; GTS Securities Letter 2; Global Payments Letter; CA Technologies Letter; Sirius Letter; Lam Letter; PayPal Letter; Nasdaq Letter 2; NYSE Letter 3. *See also* Duffy/Meeks Letter, at 1 (stating that public companies are expressing concern that the proposal will further fragment the market and cause harm to the pricing of their companies' shares at the close and, as such, they are concerned the proposal may disrupt the process for determining the closing price on the primary listing market, which is viewed as ''an incredibly well-functioning part of the capital markets''). In addition, one commenter urged the Commission to conduct a close analysis of the proposal and stated that if the Bats proposal would seriously degrade the quality of the closing price, then it should be rejected. *See* Angel Letter.

[32] *See* Nasdaq Letter 1, at 5 and 8 (stating that, for this reason Nasdaq did not believe the proposal promotes fair and orderly markets in accordance with Sections 6 and 11A of the Exchange Act); and Nasdaq Letter 2, at 3–7.

[33] *See* Nasdaq Letter 1, at 11 and Nasdaq Letter 2, at 5–6. Nasdaq also stated that while BZX does not have a responsibility to contribute to price discovery in Nasdaq's closing auction, it also is obligated to avoid affirmatively undermining price discovery. *See* Nasdaq Letter 1, at 5. In addition, Nasdaq stated that it considered, but chose not to, disclose segmented information, such as matched MOC or LOC shares, for its closing auction in a piece-meal fashion, because Nasdaq believed it would lead to unintended consequences and undermine price discovery in the closing auction. *See id.,* at 4 and Nasdaq Letter 2, at 6.

[34] *See* Nasdaq Letter 1, at 5 and 11.

[35] *See id.* at 11.

[36] *See* OIP, *supra* note 7, at 40210. Specifically, the Commission asked, ''To what extent, if at all, would the availability of the Bats Market Close impact market participants' use of limit-on-close orders in the closing auction processes on the primary listing exchanges, including with respect to size and price? Please explain. Would market participants use MOC orders in the Bats Market Close as a substitute for using limit orders to participate in the closing auction processes at the primary listing exchanges? Would any such impacts be the same for each of the primary listing exchanges? Are there differences between the closing auction processes at each of the primary listing exchanges whereby the proposed Bats Market Close would have differing effects on each primary listing exchange? If so, please explain. How does information available in the closing auction process affect market participants' order submissions and/or determination of the closing price? Would the proposed rule change affect market participants' trading strategies in closing auctions? If so, how? If commenters believe the proposal would impact the use of limit-on-close orders in closing auctions, to the extent possible please provide specific data, analyses, or studies for support.''

[37] *See* Nasdaq Letter 2, at 5–6. Nasdaq did not submit any specific data regarding the impact of the proposal on the use of limit on close orders.

no paired or imbalance shares in its imbalance publications, it would discourage further participation in the continuous market leading up to the closing auction and the closing cross, and thus there would be little ongoing price discovery, because market participants would know they would not have the ability to interact with market orders.[38] Nasdaq contrasted the BZX proposal with its own closing auction process, arguing that after it disseminates an imbalance notification that combines MOC and LOC orders, market participants can continue to submit orders to interact with existing auction interest.[39]

Moreover, Nasdaq argued that even if the proposal only resulted in fewer market-on-close orders submitted to Nasdaq closing auctions, investors would be harmed because the official closing price could potentially represent a stale or undermined price.[40] Nasdaq asserted that its closing cross is designed to maximize the number of shares that can be executed at a single price and that the number of market-on-close orders impacts the number of shares able to execute in a closing cross.[41] Further, in its second comment letter, Nasdaq elaborated on the impact it believed reducing MOC orders could have on Nasdaq's closing auction. In particular, Nasdaq argued that the proposal would harm price discovery because fragmentation of MOC orders would directly impact closing auctions for which Nasdaq only received MOC orders and that, in cases where all MOC orders were removed from the Nasdaq closing auction, the last sale price would become the official closing price, as opposed to the price being determined through the price discovery process of its closing auction.[42] Nasdaq discussed several hypothetical examples where removal of all MOC orders from certain of its previously conducted closing auctions would have resulted in use of the last sale price as the official closing price and provided aggregated statistics denoting the differential between the last sale price and the official closing price in such situations.[43]

NYSE similarly argued that even though Cboe Market Close would only accept MOC orders, it could materially impact official closing prices determined through a NYSE closing auction.[44] NYSE emphasized the importance of the centralization of orders during the closing auction on the primary listing exchange, stating that it is ''an iterative process'' that provides ''periodic information about order imbalances, indicative price, matched volume, and other metrics'' to help market participants anticipate the likely closing price, and that allows for investors to find contra-side liquidity and assess whether to offset imbalances, and for orders to be priced based on the true supply and demand in the market.[45] NYSE asserted that information on the lack of matched MOC orders in the closing process could discourage liquidity providers from participating in the closing process because their order would be less likely to interact with market orders.[46] NYSE also explained that its designated market makers (''DMMs''), which have an obligation to facilitate the close of trading in their assigned securities, factor in the size of paired-off volume, and the composition of the closing interest in assessing the appropriate closing price.[47] NYSE asserted that, under the proposal, DMMs would lose full visibility into the size and composition of MOC interest, and thus would likely have to make more risk-adverse closing decisions, resulting in inferior price formation.[48]

NYSE also argued that the proposal would detrimentally impact price discovery on the NYSE Arca and NYSE American automated closing auctions. NYSE stated that in the last six months there were 130 instances where the official closing price determined through a NYSE Arca closing auction was based entirely on paired-off market order volume.[49] In those instances, pursuant to NYSE Arca rules, ''the Official Closing Price for that auction is the midpoint of the Auction NBBO as of the time the auction is conducted.'' [50] NYSE stated that if all market orders for a NYSE Arca listed security were sent to BZX, the official closing price would instead be the consolidated last sale price, which can differ from the midpoint of the auction NBBO by as much as 3.2%.[51]

In arguing that additional fragmentation of closing auction interest would detrimentally impact price discovery, both Nasdaq and NYSE distinguished the Cboe Market Close from competing closing auctions currently operated by Nasdaq and NYSE Arca for securities listed on other markets. Nasdaq stated that the BZX proposal is a price-matching order type and not a competitive single-priced

[38] *See id.* at 6.

[39] *See id.*

[40] *See* Nasdaq Letter 1, at 12. *See also* Nasdaq Letter 2, at 6 (providing an example of how the proposal could cause a stale closing price). Nasdaq also stated that a credible independent study of the potential risk to price discovery is essential in order to consider whether the proposal is consistent with the Act. *See* Nasdaq Letter 1, at 12.

[41] *See id.,* at 11. Nasdaq subsequently submitted a memorandum providing, among other things, data relating to the level of matched MOC volume in Nasdaq closing auctions spanning the period of January 1, 2017 through September 30, 2017 (''Nasdaq Data Memo''). Nasdaq requested protection under the Freedom of Information Act for its memorandum.

[42] *See* Nasdaq Letter 2, at 3.

[43] *See id.* at 3–5. Specifically, Nasdaq identified 1,653 closing crosses between January 1, 2016 and August 31, 2017 where removal of all MOC orders would have changed the closing prices. Nasdaq asserts that this would have changed the closing valuation of Nasdaq issuers ''by nearly $870,000,000 of aggregate impact.''

[44] *See* NYSE Letter 1, at 3. While NYSE's arguments focused primarily on the potential for MOC orders to migrate to Cboe Market Close as described below, NYSE also asserted that, if the fees for the Cboe Market Close were set lower than the fees charged by the primary listing exchanges, it could induce some market participants to use MOC orders rather than sending LOC orders to the primary listing market. *See* NYSE Report, at 23.

[45] *See* NYSE Report, at 12. *See also* NYSE Letter 1, at 4. NYSE, as well as Nasdaq, also asserted that the proposal contradicts the Commission's approval of recent amendments to the National Market System Plan to Address Extraordinary Market Volatility (the ''LULD Plan'') which, they argue, centralize re-opening auction liquidity at the primary listing exchange by prohibiting other market centers from re-opening following a trading pause until the primary listing exchange conducts a re-opening auction. These commenters asserted that it would be inconsistent for the Commission to find it in the public interest to consolidate trading in a re-opening auction, while sanctioning fragmentation of trading in a closing auction. *See* Nasdaq Letter 1, at 6; NYSE Letter 1, at 3; and Nasdaq Letter 2, at 12. In response, commenters asserted the amendment to the LULD Plan cited by NYSE and Nasdaq granted the primary listing market the ability to set the re-opening price but did not mandate the consolidation of orders at the primary listing market following a trading halt. BZX believes the proposal is consistent with the LULD Plan as it seeks to avoid producing a ''bad'' or ''outlier'' closing price and does not affect the centralization of price-setting closing auction orders. *See* BZX Letter 1, at 8–9. *See also* Bollerman Letter, at 3.

[46] *See* NYSE Report, at 13 and 23. *See also* NYSE Report, at 12 (arguing that ''[a]nticipation that there will be MOC orders in the closing auction is a critical component feeding into the decisions of liquidity providers and other market participants'' trading in the closing auction).

[47] *See* NYSE Letter 1, at 4. In response to this assertion, ViableMkts argues that use of Cboe Market Close is voluntary. Accordingly, if a market participant wanted a DMM to be aware of their closing activity they could still send their orders to the NYSE closing auction. *See* ViableMkts Letter, at 4.

[48] *See* NYSE Letter 1, at 4.

[49] *See* NYSE Letter 1, at 5. *See also* NYSE Report, at 11–12. NYSE represented that once NYSE American transitions to Pillar technology, it will conduct a closing auction in an identical manner to NYSE Arca.

[50] *See id.*

[51] *See id.* In its third comment letter, NYSE also asserts that, in contrast to the data NYSE provided in its first letter, BZX failed to provide any data in response to the requests for comment in the OIP to support the claim that there would be no impact on price discovery. *See* NYSE Letter 3, at 2. *But see* BZX Letter 3, at 2–4, 7–9 and *infra* notes 99–106 and accompanying text discussing data and analysis provided by BZX.

auction that offers price discovery.[52] In contrast, Nasdaq states that its single-priced auction for non-Nasdaq listed stocks was designed to maximize order interaction and improve price discovery for issuers, not to siphon orders away from the primary market without seeking to improve price discovery.[53] Accordingly, Nasdaq argued that the fact that it and NYSE offer competing closing auctions is irrelevant because those auctions are fundamentally different from the BZX proposal.[54] Similarly, NYSE argued that it believed it was misleading to compare the proposal to the competing closing auctions because BZX would be offering neither a competing closing auction nor a facility to establish the official closing price should a primary listing exchange invoke its closing auction contingency plan.[55]

Nasdaq and NYSE further argued that competing closing auctions cause minimal fragmentation, as volumes in those auctions are ''miniscule.'' [56] For example, Nasdaq stated that volumes in all competing auctions in Nasdaq-listed corporate securities in the month of June 2017 were less than 0.5% of Nasdaq's closing volume.[57] Similarly, NYSE stated that for the period January 1, 2017 through October 13, 2017, closing auctions in NYSE and Nasdaq-listed securities on NYSE Arca represent 0.5% of the notional value traded in the NYSE and Nasdaq closing auctions.[58] Nasdaq further asserted that less than half of Nasdaq-listed corporate issues experience price dislocations in competing closing auctions.[59] Moreover, Nasdaq and NYSE stated that on multiple occasions when they received closing interest for securities listed on another exchange, they have contacted the firms associated with those orders and encouraged them to route their orders directly to the primary listing exchange.[60]

Nasdaq and NYSE also addressed price-matching services in the over-the-counter market. Nasdaq stated that the proposal would introduce a new category of price-matching venues, which would exacerbate the harm caused by fragmentation.[61] Both Nasdaq and NYSE stated that over-the-counter price-matching services should not be considered a precedent for the Cboe Market Close proposal. Nasdaq stated that, as a neutral trading platform, an exchange is capable of attracting and aggregating more liquidity than a broker-dealer.[62] Moreover, according to Nasdaq, trades resulting from broker-dealer price-matching services are often also involved in the closing auction on the primary listing exchange, thus contributing to price discovery despite operating a price-matching service.[63] Nasdaq explained that a broker may accept a MOC order and trade as either agent or principal against that order by entering limit orders into either the closing auction on the primary listing exchange or the continuous market leading up to the closing auction. After receiving an execution in the primary market closing auction, the broker would then trade with the customer off-exchange at a price determined by the primary market closing auction.[64] Similarly, NYSE argued that it should not be assumed that the current level of MOC orders executed away from the primary market is a reasonable proxy for the impact of the BZX proposal.[65] Specifically, NYSE asserted that market makers that cross orders on behalf of clients at the closing price could be risking capital on such transactions, which would likely be a constraining force on the magnitude of orders crossed away from primary markets, while BZX would have no such obligation to commit capital in Cboe Market Close.[66] As such, NYSE argued that the BZX proposal, if successful, could result in a much higher percentage of MOC orders diverted away from the primary market than what occurs today.[67]

In addition, NYSE stated that existing off-exchange matching services have a negative impact on the validity and integrity of price discovery in the closing auctions.[68] NYSE stated that data it analyzed from certain closing auctions with large imbalances [69] shows that, for securities with 1,000 shares or less reported at the official closing price (on and off-exchange), volatility in the last 10 minutes of trading leading into the close is 52% higher when more than 75% of a security's closing share volume is reported to a trade reporting facility (''TRF'') (*i.e.,* paired off-exchange), compared to when less than 25% of a security's closing share volume is reported to a TRF. In addition, NYSE asserted that its data showed that the official closing price generated in auctions for securities with 1,000 shares or less reported at the official closing price (on and off-exchange) where more than 75% of a security's share volume is reported to a TRF was more than twice as far away from the last consolidated sale price and nearly twice as far away from the market volume weighted average price (''VWAP'') of the last two minutes of trading leading into the close.[70] Accordingly, NYSE concluded that existing fragmentation degrades the quality of the closing price.[71]

Several other commenters also discussed how the proposal may impact the integrity of official closing prices. In particular, GTS, a DMM on NYSE, argued that market-on-close orders are a vital component of closing prices and, should those orders be diverted away from the primary listing markets as a result of the proposal, it could undermine the official closing prices.[72] GTS stated that, in pricing a closing auction on NYSE, it considers a variety of inputs and stated that it considers ''the size of . . . matched shares and the time those matched shares are consumed by each individual book [to be] essential data points for

[52] *See* Nasdaq Letter 2, at 8–9.

[53] See *id.* at 9.

[54] *See id.*

[55] *See* NYSE Letter 2, at 3.

[56] *See* Nasdaq Letter 2, at 9–10; *see also* NYSE Letter 3, at 5–6.

[57] *See* Nasdaq Letter 2, at 11.

[58] *See* NYSE Letter 3, at 6. NYSE also stated that it does not have a business interest in running closing auctions for securities listed on other markets. It operates the NYSE Arca closing auction for resiliency purposes, which it believes outweighs any modest negative impact on fragmentation. *See id.; see also infra* note 239.

[59] *See* Nasdaq Letter 2, at 11. In response to BZX's claim that a large percentage of competing closing auctions conducted by Nasdaq and NYSE resulted in closing prices different from the official closing price, Nasdaq also stated that many of the examples cited in BZX Letter 1 are from competing auctions in ETFs, which, Nasdaq stated, have a fundamentally different price discovery process. Nasdaq argued that if ETFs were removed from the analysis, less than half of Nasdaq-listed corporate issues see a price difference when closing on NYSE Arca. *See id.*

[60] *See id.* at 13; NYSE Letter 3, at 6. *See also infra* note 87 and accompanying text.

[61] *See* Nasdaq Letter 2, at 13.

[62] *See id.*

[63] *See id.*

[64] *See id.* The Nasdaq Data Memo also provided data and analysis arguing that a portion of the broker-dealer volume executed off-exchange after the close at the primary listing market's closing price reflects brokers submitting customers' interest to the closing cross and subsequently reporting an over-the-counter trade between the broker and its customers.

[65] *See* NYSE Report, at 10.

[66] *See* NYSE Report, at 10.

[67] *See* NYSE Report, at 10. The NYSE Report asserted that this was one of the limitations of drawing conclusions from the DERA Analysis regarding how the BZX proposal would impact the market close. See discussion of DERA Analysis, *infra* notes 133–134 and accompanying text.

[68] *See* NYSE Letter 3, at 3.

[69] *See id.* at 3. NYSE stated that it reviewed closing auctions with imbalances of 50% of paired shares as of 3:50 p.m. *See id.* at 4.

[70] *See id.* at 3–4. NYSE provided data that they asserted illustrates that the same degradation in the quality of the official closing price also occurs in closes for securities with 10,000 shares or more reported at the official closing price. *See id.* at 4.

[71] *See id.* at 3–4.

[72] *See* GTS Securities Letter 1, at 2–3.

consideration.'' [73] If this information is fragmented across multiple venues, according to GTS, the closing price will change and will become less reliable.[74] Eighteen commenters asserted that the proposal would make it more difficult for Designated Market Makers to facilitate an orderly close of NYSE listed securities as they would lose the ability to continually assess the composition of market-on-close interest.[75] Many of these commenters are issuers listed on NYSE and asserted that one of the reasons they chose to list on NYSE was the ability to have access to a DMM that is responsible for facilitating an orderly closing auction.[76]

Multiple commenters stated that one of the benefits of a centralized closing auction conducted by the primary listing market is that it allows market participants to fairly assess supply and demand such that the closing prices reflect both market sentiment and total market participation.[77] Because they believed that the proposal may cause orders to be diverted away from the primary listing exchanges, these commenters argued that it would negatively affect the reliability and value of closing auction prices. Several commenters further argued that centralized closing auctions provide better opportunities to fill large orders with relatively little price impact.[78]

In response to concerns regarding the impact of the proposal on the price discovery process, BZX argued that, because the proposal would only match MOC orders and would require the Exchange to publish the number of matched shares in advance of the primary listing markets' cut-off times, BZX believes it would avoid any impact on price discovery.[79] BZX also stated that it does not believe the proposal would impact the use of LOC orders on the primary listing markets as LOC orders provide price protection and the lower fees charged to MOC orders that participate in Cboe Market Close would not outweigh the risk of receiving an execution at an unfavorable price.[80] BZX further challenged commenters' concerns that Cboe Market Close could pull all MOC orders away from the primary listing markets and alter the calculation of the closing price, stating that such a scenario could occur today as a result of competing closing auctions and broker-dealers that offer internal MOC order matching solutions.[81] Accordingly, BZX contends that the proposal would not impose fragmentation on the market at the close that does not already exist today.[82]

In particular, with regard to competing closing auctions, BZX argued that such competing auctions could not only pull all MOC interest away from the primary listing markets but could also divert all price-setting limit-on-close interest from those markets as well.[83] Further, BZX argued that Nasdaq and NYSE's assertions that they currently attract low trading volumes in their competing closing auctions are irrelevant to an analysis of their potential impact on fragmentation.[84] Should these auctions see an increase in order flow, BZX argued they would increase existing market fragmentation.[85] BZX also asserted that such competing closing auctions often may produce bad auction prices on the non-primary market, as compared to the proposed Cboe Market Close which would ensure that market participants receive the official closing price.[86] In addition, in response to NYSE's assertion that it contacted firms that submitted orders to NYSE Arca's competing closing auction and encouraged them to instead submit orders to the primary listing market, BZX provided data that it stated evidences that NYSE has not, in fact, discouraged order flow to their competing auctions and that NYSE Arca's competing auction ''continues to maintain not insignificant monthly volume'' in at least two securities.[87]

With regard to off-exchange matching processes, BZX stated that several off-exchange venues currently offer executions at the official closing price and therefore provide a forum to which participants may choose to send MOC orders in lieu of sending MOC or LOC orders to the primary listing market.[88] BZX stated, however, that it was not aware of any concerns raised by NYSE, Nasdaq, or the Commission regarding the impact of such venues on the use of LOC orders in the closing auctions of the primary listing exchanges.[89]

BZX also provided certain data regarding current trading volume at the close on venues other than primary listing exchanges to show that the proposal would ''not introduce a new

[73] *See* GTS Securities Letter 2, at 3. GTS also stated that the types of orders submitted to the closing auction, such as limit or market, also impact its pricing determinations. *See id.*

[74] *See id.* at 4.

[75] *See* NYSE Letter 1, at 4; GTS Securities Letter 1, at 2–3; Customers Bancorp Letter; Masonite International Letter; Orion Group Letter; CTS Corporation Letter; Encana Letter; Triangle Capital Letter; Pennsylvania REIT Letter; IMC Letter, at 1–2; Southern Company Letter; Nobilis Health Letter; CACI Letter; Turning Point Letter; P&G Letter; Cardinal Health Letter; FedEx Letter; Stewart Letter; Global Payments Letter. *See also supra* notes 45–48 and accompanying text. Four commenters also asserted that the proposal would have potentially detrimental impacts on NYSE floor brokers. *See* Bowers Letter; Meridian Letter; Americas Executions Letter; and GTS Securities Letter 2, at 4.

[76] *See* GTS Securities Letter 1, at 2–3; Masonite International Letter; Encana Letter; Triangle Capital Letter; Pennsylvania REIT Letter; Nobilis Health Letter; CACI Letter; Turning Point Letter; P&G Letter; Cardinal Health Letter; FedEx Letter; and Stewart Letter.

[77] *See* Bowers Letter; Americas Executions Letter; and FedEx Letter. *See also* Coupa Software Letter; Trade Desk Letter; Mimecast Letter (arguing that gathering liquidity in a single venue ensures that the market reaches an accurate and reliable closing price for their stocks); Global Payments Letter.

[78] *See e.g.,* Bowers Letter; Americas Executions Letter; Customers Bancorp Letter; Orion Group Letter; and Southern Company Letter.

[79] *See* BZX Letter 1, at 3–4 and BZX Letter 2, at 2 and 10. In addition, BZX offered to disseminate more information with regard to Cboe Market Close and to disseminate such information via the applicable securities information processor, in addition to the Bats Auction Feed. *See* BZX Letter 1, at 4 and 12–13, and BZX Letter 2, at 2. BZX further asserted that it believed modern software can easily and simply add this data to data disseminated by the primary listing markets. *See* BZX Letter 1, at 4 and BZX Letter 2, at 3.

[80] *See* BZX Letter 2, at 3.

[81] *See* BZX Letter 1, at 4–5 (stating that neither NYSE nor Nasdaq prohibits their members from withholding MOC orders from their closing auctions) and BZX Letter 2, at 2–3. In response, NYSE stated that it believed such broker-dealer services degrade the public price and size discovery of the primary listing exchanges' closing auctions, but that such activities are not held to the same standards under the Act as national securities exchanges and against which the BZX proposal must be evaluated. *See* NYSE Letter 2, at 4. GTS further stated in response that it believes such broker-dealer services deprive the DMM of content that is critical to pricing a closing auction and the Commission should study the impact of this activity on closing auctions. *See* GTS Securities Letter 2, at 4. *See infra* note 129 and accompanying text discussing the DERA analysis of the relationship between the proportion of MOC orders currently executed off-exchange and closing price discovery and efficiency.

[82] *See* BZX Letter 1, at 4 and BZX Letter 2, at 2.

[83] *See* BZX Letter 1, at 5; BZX Letter 2, at 2; and BZX Letter 3, at 4. BZX provided evidence of 14 instances in June 2017 where a Nasdaq-listed security had no volume in Nasdaq's closing auction but did have volume in NYSE Arca's closing auction. *See* BZX Letter 1, at 5.

[84] *See id.* at 6.

[85] *See id.* BZX also stated that, despite their potential utility as a back-up in case of a market impairment, Nasdaq and NYSE Arca run these competing auctions on a daily basis, regardless of whether there is an impairment at a primary listing exchange. *See id.* BZX further questioned why these exchanges do not utilize test symbols and test data in order to confirm the operational integrity of the auction processes without potentially harming the price discovery process by the primary's closing auction. *See* BZX Letter 3, at 5.

[86] *See* BZX Letter 1, at 4 and BZX Letter 2, at 2. BZX asserted that 86% of closing auctions conducted by Nasdaq for NYSE-listed securities in June 2017 resulted in closing prices different from the official closing price and 84% of competing closing auctions conducted by NYSE Arca for Nasdaq-listed securities in June 2017 resulted in closing prices different from the official closing price. BZX Letter 1, at 4.

[87] BZX Letter 3, at 4.

[88] BZX Letter 2, at 3.

[89] *Id.,* at 3.

type of fragmentation at the close.'' [90] Specifically, BZX argued that off-exchange venues ''siphon significant order flow at the close from the primary listing markets,'' as over the first nine months of 2017, off-exchange volume at the official closing price represented approximately 30% of Nasdaq closing volume for Nasdaq-listed securities and 23% of NYSE closing volume for NYSE-listed securities.[91] Moreover, BZX argued that the proposal ''could increase transparency by incentivizing market participants to re-direct their MOC orders from off-exchange venues to a public exchange,'' whose processes are subject to the requirements of the Act, would be included in BZX's rules, and would be subject to the proposed rule change requirements of Section 19(b) of the Act before any changes could be made to the operation of Cboe Market Close.[92] In addition, BZX argued that attracting order flow away from off-exchange venues would have the additional benefit of increasing the amount of volume at the close executed on systems subject to Regulation SCI's resiliency requirements.[93]

In response to NYSE's data regarding the impact of off-exchange activity at the close on closing auction price formation, BZX presented several critiques of the analysis. First, BZX asserted that NYSE provided selective data that supported their conclusion that existing fragmentation at the close has a negative impact on price discovery in closing auctions. In particular, BZX stated that NYSE did not indicate the number of closing auctions included in its data set.[94] BZX also stated that NYSE's data set was limited to auctions with less than 1,000 shares, imbalances of 50% or more of the paired shares as of 3:50 p.m., and securities for which more than 75% of the volume was reported to the TRF. Based on its own analysis, discussed below, BZX estimated that the number of auctions included in NYSE's data set for auctions with 1,000 shares or less to be less than 100th of 1% of all auctions.[95] Therefore, BZX argued that NYSE's findings are ''of no statistical significance.'' [96]

BZX further argued that it is possible that such low volume securities with severe imbalances would be subject to price variations between the last sale and the official closing price, regardless of the amount of off-exchange closing activity.[97] In addition, BZX stated that the data that NYSE provided for auctions with more than 10,000 shares shows that the ''impact on closing prices is dampened in more actively traded securities,'' which it believes undercuts NYSE's conclusions and ''further highlights the selective and limited nature of NYSE's data set.'' [98]

Furthermore, BZX stated that it conducted its own analysis of data from all primary auctions in NYSE-listed securities for which there was a closing auction and a last sale regular way trade, regardless of size, from January 2, 2017 through September 29, 2017.[99] BZX stated that it reviewed auctions with imbalances of 50% or more of paired shares at 3:55 p.m. BZX also stated that it compared auctions where less than 25%, 25% to 50%, 50% to 75%, and more than 75%, of the closing volume was reported to the TRF.[100] BZX also grouped its data amongst auctions with 1,000,000 shares or more, 100,000 shares to 1,000,000 shares, 10,000 to 100,000 shares, 1,000 to 10,000 shares, and less than 1,000 shares.[101] BZX stated that its analysis shows that ''the average price gap between the last sale and the official closing price was 9.09 basis points across all groups.'' [102] BZX stated that it also found that ''price gaps are greater amongst auctions with less than 25% of closing volume reported to the TRF.'' [103] BZX concluded that its analysis contradicts NYSE's conclusions, asserting that it shows that ''the amount of TRF closing volume has little to no relationship to the primary listing market's closing auction process.'' [104]

In addition, BZX stated that it also found similar patterns ''when it analyzed securities based on their ADV instead of auction size.'' [105] BZX acknowledged that, while securities with less than 10,000 shares appear to have the most volatility, these securities account for a small percentage of overall auction volume, and argued that such volatility ''is more likely indicative of the applicable security's trading characteristics.'' [106]

In response to NYSE's arguments regarding the impact on a DMM's ability to price the close, BZX argued that this point highlights what it believes to be an additional benefit of allowing it to compete with NYSE's closing auction.[107] Specifically, BZX argued that NYSE's assertion that DMMs consider the composition of closing interest in making pricing decisions ''suggests that the NYSE closing auction is not a true auction and can be an immediate detriment to users sending MOC orders of meaningful size to the NYSE.'' [108] Accordingly, BZX stated that it believed this ''highlights an additional benefit'' of Cboe Market Close as it ''would provide an alternative pool of liquidity and a mechanism for large order senders to avoid the subjective decision making of the DMMs who are free to make closing price decisions to their profit benefit at the client's expense.'' [109]

As the Commission stated in the OIP, it has consistently recognized the importance of the closing auctions of the primary listing markets.[110] In particular, the Commission has previously stated that ''reliable . . . closings on the primary listing markets are key to the establishment of fair and orderly markets.'' [111] Accordingly, the Commission has carefully analyzed and considered the proposal's potential impact, if any, on the primary listing markets' closing auctions, including their important price discovery functions, and the reliability and integrity of closing prices. After careful consideration of the proposal and all of the comments received and for the reasons discussed throughout, the Commission believes that Cboe Market Close is reasonably designed not to disrupt the price discovery process in the closing auctions of the primary listing exchanges and is consistent with the Act and the rules and regulations thereunder.[112]

Importantly, Cboe Market Close will only accept MOC orders and not LOC orders. Contrary to some commenters' assertions that MOC orders contribute to the closing price, the Commission

[90] *See id.* at 4–5.

[91] *See* BZX Letter 2, at 4. BZX further asserted that, over the course of 2017, the amount of off-exchange closing volume has been increasing. *See id.* at 5.

[92] *See id.* at 5–6.

[93] *See id.* at 11.

[94] *See* BZX Letter 3, at 2.

[95] *See id.* at 2–3.

[96] *See id.* at 3.

[97] *See id.*

[98] *See id.*

[99] *See id.*

[100] *See id.*

[101] *See id.*

[102] *See id.*

[103] *See id.*

[104] *See id.* at 3–4.

[105] *See id.* at 3.

[106] *See id.* at 4.

[107] *See* BZX Letter 1, at 10.

[108] *Id. See also supra* note 47–48 and accompanying text.

[109] *Id.* In response, NYSE argued that BZX's claims regarding the role of the DMM were not germane to whether the proposal is consistent with the Act and stated that it believed the scale of its closing auction and the low levels of volatility observed in the auction demonstrate its effectiveness. *See* NYSE Letter 2, at 4.

[110] *See* OIP, *supra* note 7, at 40210.

[111] *See id.* (citing to Securities Exchange Act Release No. 73639 (November 19, 2014), 79 FR 72255, 72278 (December 5, 2014)).

[112] Accordingly, for the reasons discussed throughout, the Commission believes the proposal is consistent with the maintenance of fair and orderly markets. *See* Sections 6 and 11A of the Act; see *supra* note 32.

believes that MOC orders, which do not specify a target price and seek to be executed at the closing price at the end of the trading day are, by their nature, the recipients of price formation information and generally do not directly contribute to setting the official closing price of securities on the primary listing markets.[113] In particular, the Commission believes that paired-off MOC interest, such as that would be matched and executed in the Cboe Market Close, does not fundamentally affect the determination of the closing price. As many commenters stated, the price determined in a closing auction is designed to be a reflection of market supply and demand, and key considerations in setting the closing price are maximizing the number of shares executed and minimizing the amount of the imbalance between buy and sell interest. The Commission believes that matching paired-off MOC orders in the manner BZX proposes would not affect the net imbalance of closing eligible trading interest in the market. As such, the orders that actively participate in, and contribute to, the price formation process in a closing auction—including limit orders and unpaired MOC orders—would not be executed in the Cboe Market Close and could continue to be submitted to the primary listing exchange. Accordingly, the Commission believes that the proposal is reasonably designed to not disrupt the price discovery process and closing auction price formation.

The Commission recognizes that several commenters made assertions that matched MOC order flow provides informational content regarding the depth of the market that indicates true supply and demand and contributes to market participants' decisions regarding order submission and ultimately price formation.[114] As such, these commenters argued that removing matched MOC orders from the primary listing market would impact price formation. However, the Commission believes that, while the proposal may result in the execution of some MOC orders on a venue other than the primary listing exchange, BZX's proposal, because it would require the size of matched MOC orders to be published well in advance of the order entry cut-off times for the primary listing exchanges' closing auctions, is reasonably designed to allow market participants to, in conjunction with the information disseminated by the primary listing exchanges, ascertain closing auction liquidity demand. Accordingly, the Commission believes that the information disseminated by BZX could be used by market participants in conjunction with the information disseminated by the primary listing exchange to make order submission decisions. Although some commenters also asserted that DMMs would no longer have full visibility into the size and composition of MOC interest, DMMs will have access to the amount of paired-off MOC volume on BZX well in advance of NYSE's order entry cut-off time and the start of the NYSE closing auction. An NYSE DMM could, for example, use such information to determine the total amount of MOC interest for a given security in Cboe Market Close and NYSE's closing auction, in establishing the relevant context for any imbalances in NYSE closing auctions and calculating appropriate closing prices.[115] Further, the Commission believes that, as BZX stated, the Cboe Market Close could benefit market participants that do not wish to disclose information regarding their orders to certain other market participants such as DMMs by providing another venue to which they may send their orders for execution at the closing price. In addition, the Commission does not agree with those commenters that argued that the proposal contradicts the Commission's approval of Amendment 12 to the LULD Plan, as the LULD Plan does not mandate that market participants consolidate their orders at the primary listing exchanges, but rather requires that a trading pause continue until the primary listing exchange has reopened trading.[116] While pursuant to the LULD Plan trading may not begin until the reopening on the primary listing exchange, market participants continue to have the choice as to where to submit their orders.

As discussed above, NYSE and Nasdaq argued that if the proposed rule change resulted in the removal of all MOC orders from the primary listing exchanges' closing auctions, that result would impact closing prices in instances where no auction could be held in accordance with their rules. In such scenarios, NYSE and Nasdaq assert that, pursuant to the primary listing exchanges' rules, the resulting closing price would be the consolidated last sale price.[117] NYSE and Nasdaq both sought to quantify the extent to which last consolidated sale prices would have differed from closing prices determined through closing auctions. The data and counterfactual examples provided in this regard assume that the BZX proposal would result in *no* market participants choosing to send any MOC orders to the primary listing markets' closing auctions. However, the commenters did not assert how likely it was for such a scenario to occur or provide data in support thereof, nor did they provide any other data regarding what the impact would be should fewer than all MOC orders be diverted from the primary listing markets. While NYSE further asserted that one ''plausible outcome'' of the BZX proposal is that the majority of MOC orders would migrate to Cboe Market Close, it acknowledged that it was ''hard to predict what would happen if the [BZX] proposal were to be approved.'' [118] Further, NYSE explained that this outcome would likely be the case if the fees set by BZX for Cboe Market Close were lower than the primary listing markets and there was no competitive response by the primary listing exchanges.[119] The Commission believes it may be possible that there would be instances in which no MOC orders participate in a primary listing market's closing auction following implementation of the Cboe Market Close. However, such instances can occur today, and the Commission believes that the more likely scenario is that, if Cboe Market Close were to be approved and implemented, it would draw some, though not all, MOC orders from the primary listing markets, because many market participants likely base decisions regarding where to send closing orders not solely on fees, but rather on many other factors, including the reliability, stability, technology and surveillance associated with such auctions,[120] and because currently there

[113] *See supra* notes 40–48 (discussing Nasdaq's and NYSE's arguments of how MOCs can contribute to the closing price).

[114] *See supra* notes 45–48, 72–75 and 77 and accompanying text.

[115] The proposal would not alter the information DMMs would have relating to off-exchange MOC interest. In addition, one commenter that is supportive of the proposal is a DMM on NYSE and stated that the proposal ensures that the price discovery process remains intact because BZX would only match buy and sell MOC orders and not limit orders, which it stated, ultimately lead to price formation. *See* Virtu Letter, at 2.

[116] *See* Securities Exchange Act Release No. 79845 (January 19, 2017), 82 FR 8551, 8552 (January 26, 2017). *See also* BZX Letter 1, at 8–9 and Bollerman Letter at 3.

[117] *See* Nasdaq Letter 2, at 3; NYSE Letter 1, at 5. *See also, e.g.,* NYSE Rule 123C(1)(e); NYSE Arca Rule 1.1(ll)1.

[118] *See* NYSE Report, at 22.

[119] *Id.*

[120] *See generally,* Nasdaq Letter 1, at 3–4 (asserting that the Nasdaq closing cross has been successful due to its integrity, stability, reliability, and regulation). Furthermore, in assessing whether to utilize Cboe Market Close, market participants may evaluate other attributes of the functionality, such as the need to monitor whether they were matched on BZX and potentially having to send

exist competitive alternatives to execute MOC orders off-exchange, yet the majority of MOC orders continue to be executed in the closing auctions on the primary listing exchanges.[121] While the Commission acknowledges that, as some commenters argued, current levels of off-exchange MOC activity are not a perfect measure of the potential resulting impact of the proposal, the Commission believes that they do provide some limited insight, as discussed further below. Further, the Commission believes that, should market participants choose to send a substantial portion of MOC orders to the Cboe Market Close, the primary listing exchanges have various other options available to them to try to compete for such orders, and it is unlikely that such exchanges would choose to accept the complete loss of MOC order market share and make no attempt at a competitive response.

Further, while the commenters' analyses examined price differentials in various contexts, differences in prices alone are not dispositive with respect to price discovery or efficiency. First, a large difference between a reference price (*e.g.,* the last sale price) and the closing price may reflect genuine information if the price change persists, or may reflect a temporary price pressure if the price change subsequently reverses.[122] Because the data and analyses that commenters provided did not analyze subsequent price changes, it is unclear whether the pre-close price differentials indicate better or worse price discovery or efficiency. Second, when comparing price differences across securities, the analyses did not distinguish whether the observed differences were due to the removal of MOC orders from the primary listing exchange or due to liquidity differences. As described above, NYSE provided an analysis comparing price differences between securities in which 75% of the total closing volume was reported to a TRF, to securities in which 25% of the total closing volume was reported to a TRF, and argued that securities with more off-exchange MOC activity have more closing price volatility. However, the Commission believes that closing price volatility and off-exchange activity may be correlated with unobserved liquidity factors. For example, small stocks tend to have high trading costs (*e.g.,* wider spreads, thinner order books) and more volatility on average.[123] Therefore, it is possible that the price differences observed by the commenter could be due to differences in liquidity or other factors not controlled for in the analysis, rather than the levels of off-exchange MOC activity.[124] Nasdaq's analysis involved 1,653 closing crosses that occurred between January 1, 2016 and August 31, 2017, which the Commission estimates accounts for approximately 0.44% of all Nasdaq auctions over that time period. As such, the Nasdaq analysis may not be a representative sample.[125] Moreover, Nasdaq did not address whether the securities analyzed are highly illiquid. If they are highly illiquid, price differences between the last sale price and the closing auction price may be large for reasons unrelated to the specifics of the auction mechanism.[126] Given these limitations, including that Nasdaq's estimate may overstate the impact, the data and analysis provided in these comments do not persuade the Commission that the proposal is inconsistent with the Act.

Further, while NYSE and Nasdaq implied that use of the consolidated last sale price as the official closing price is inferior to the price discovery process of the closing auction, the use of the consolidated last sale price as the official closing price when a primary listing exchange does not conduct a closing auction is not mandated by the Act or rules thereunder, but rather is established by the rules of that exchange. Therefore, if a primary listing exchange believes that such prices no longer reflect an appropriate closing price in certain scenarios, it is within the exchange's discretion to reevaluate whether reliance on the last consolidated sale price is the appropriate means for determining the official closing price in such scenarios, and may file proposed rule changes to amend its rules to establish alternative methods of determining the official closing price should no auction be held that it believes to be more appropriate.[127]

Some commenters also argued that the proposal would impact the submission of LOC orders to the primary listing markets. As BZX stated in its response letter, LOC orders provide price protection, whereas MOC orders are submitted by market participants who may be less price sensitive and who may prioritize other aspects of a closing execution over price. As such, the Commission does not believe that it is likely that market participants would be more inclined to assume the risk of submitting MOC orders to the Cboe Market Close in circumstances where they otherwise would have submitted price-protected LOC orders into the primary markets' closing auctions, solely to pay lower fees. As discussed above, Nasdaq and NYSE also asserted that the Cboe Market Close could discourage submission of orders in the continuous market and closing cross if there were a large amount of paired MOC orders in Cboe Market Close and a subsequent lack of imbalance information disseminated on the primary listing markets.[128] However, the Commission believes this risk is not unique to the availability of the Cboe Market Close and, indeed, exists today. Specifically, the Commission believes that the submission of orders would similarly be discouraged today if such large amount of MOC orders in a listed security had been paired on the primary listing exchange and accordingly, there was little or no resulting imbalance disseminated by such exchange. Irrespective of the exchange upon which the MOC orders are paired, the net imbalance published by the primary listing exchange would be expected to be the same. In addition, because Cboe Market Close would publish the volume of MOC orders paired prior to the start of the closing auctions on the primary

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their MOC orders to more than one venue if not matched, as well as having to commit to transact at the closing price at an earlier time than they otherwise would have had they chosen to send their MOC orders to the primary listing exchanges.

[121] See DERA Analysis, *supra* note 8 (finding that, on average, approximately 9.3 percent of closing volume is matched off-exchange at the primary listing exchange's closing price); NYSE Report, at 22 (stating that closing auctions on the listing exchanges currently process the vast majority of the MOC and LOC orders in the market); and Nasdaq Data Memo, *supra* note 41 (providing data relating to the level of matched MOC volume in Nasdaq closing auctions).

[122] *See e.g.,* Joel Hasbrouck, ''Measuring the Information Content of Stock Trades,'' *Journal of Finance* 46, 179–207 (1991), *available at www.jstor.org/stable/2328693.*

[123] For example, one study examined fragmentation in the U.S. equities markets and showed that small cap stocks are more fragmented than large cap stocks for Nasdaq-listed issues. It also found that fragmentation is correlated with higher short-term volatility, but increased market efficiency. *See* Maureen O'Hara and Mao Ye, ''Is Market Fragmentation Harming Market Quality?,'' *Journal of Financial Economics* 100, 459–474 (2011), *available at http://www.sciencedirect.com/science/article/pii/S0304405X11000390.*

[124] *See also* notes 94–106 and accompanying text (discussing BZX's comments with respect to NYSE's analysis and BZX's own analysis of such data).

[125] *See supra* note 43.

[126] *See id. See also* NYSE Report, at 12 (''The difference between the last sale price in the continuous market and the closing auction price, particularly for less active securities where the last sale price may be stale, can be significant.'').

[127] For example, like all market participants, the primary listing exchanges could determine if and how to utilize the information BZX disseminates regarding paired MOC interest in the Cboe Market Close for determining the official closing price should they choose to do so.

[128] *See supra* notes 37–38 and 46 and accompanying text.

listing exchanges, market participants should have sufficient time to incorporate such information relating to the levels of MOC interest in the Cboe Market Close in a given security into their decisions about order submissions into the closing auctions.

In addition, as discussed above, many commenters addressed the existence of fragmentation at the close today due to off-exchange matching processes and competing closing auctions. With regard to broker-dealer matching services, the Commission's consideration and analysis of whether BZX's proposal is consistent with the Act as an exchange is subject to differing requirements and standards than those that apply to broker-dealers under the Act. At the same time, how such existing off-exchange services impact closing auctions on the primary listing markets may provide some limited insight into the potential impact of the proposal on the price discovery function of the primary closing markets, particularly to the extent the proposed Cboe Market Close is similar to such off-exchange services.

The staff from the Commission's Division of Economic and Risk Analysis analyzed the relationship between the proportion of MOC orders executed off-exchange and closing price discovery and efficiency.[129] The DERA Analysis made several findings that the Commission believes, while not dispositive, are relevant to commenters' claims regarding Cboe Market Close's potential impact on price discovery and other data and assertions presented regarding current off-exchange matching services. In particular, the DERA Analysis found that, on average, closing auction volume accounts for approximately 5.2 percent of daily volume, and on average, approximately 9.3 percent of closing volume is executed off-exchange at the primary listing exchange's closing price. The DERA Analysis also found that, in a sample spanning the first quarter of 2017, variation in off-exchange MOC share is not significantly correlated with closing price discovery or efficiency, controlling for primary auction activity, off-exchange trading activity during regular trading hours, average market capitalization, average daily trading volume, average daily stock return volatility, and closing price volatility.[130] In further sample splits (*e.g.,* by listing venue, security type, and index inclusion), the DERA Analysis finds some mixed evidence of statistically significant correlations, but no consistent or conclusive evidence that contradicts the full-sample analysis.

NYSE provided several critiques of the DERA Analysis' methodology and argued that the DERA Analysis' findings should not be interpreted as providing evidence that BZX's proposal would have no negative impact on price discovery or the efficiency of closing prices.[131] NYSE also asserted that the DERA Analysis does not adequately address the concerns raised by commenters that the BZX proposal might undermine price discovery, have a negative effect on the quality of official closing prices, and introduce new concerns related to market manipulation and ''gaming.''[132]

As discussed above, NYSE stated that because the bulk of the volume accounted for in the DERA Analysis is market maker volume crossed on behalf of clients, it may not be a good proxy for evaluating the potential impact of the proposal.[133] In addition, NYSE stated that if BZX's proposal is successful, it could divert a higher percentage of MOC orders away from the primary listing markets than is currently observed in an analysis of existing off-exchange MOC activity. Accordingly, NYSE argued that the DERA Analysis does not have sufficient data to measure the effects when off-exchange MOC volume is high, which is likely to yield greater power to find an effect.[134] NYSE also claimed that the DERA Analysis failed to account for instances when there is no closing auction, which could result in not considering instances where, according to NYSE, price discovery in the closing auction would be most impacted by diverting MOC orders away from the primary listing market.[135]

In criticizing the methodology of the DERA Analysis, NYSE further asserted that ''widely accepted'' alternative approaches for analyzing potential behavior and incentives under alternative market structures could be useful in considering the impact of BZX's proposal on closing price discovery and efficiency.[136] In addition, NYSE stated that it may be possible to use a simulation approach to investigate the degree to which routing MOC orders away from the primary listing exchanges impacts price discovery.[137]

Concluding that the methodology used by the DERA Analysis does not provide meaningful evidence of the extent to which off-exchange MOC trading currently impacts the informational efficiency of the official closing price, NYSE discussed the metrics used in the DERA Analysis.[138] With respect to the Price Contribution metric, NYSE argued that the metric is not suitable for evaluating the quality of the closing auction because it is a ''simplistic measure'' of the degree of price discovery that would classify ''large arbitrary swings'' in prices as good price discovery.[139] Concerning the Price Reversal metric, NYSE stated that as a measure of the efficiency of official closing prices, it is a ''noisy and imprecise'' metric that makes it unlikely that one would find a significant result, even if one exists, and that it also has no clear interpretation.[140] NYSE further

[129] *See* DERA Analysis, *supra,* note 8.

[130] Though the DERA Analysis' findings suggest ''that existing levels of fragmentation do not, on average, correlate with price discover or price efficiency,'' the DERA Analysis makes clear that ''the data we have does not allow us to predict how [Cboe Market Close] would affect price discovery in the closing auction process, and market participants' use of limit-on-close orders in the closing auction processes.'' In addition, the DERA Analysis states that it does not attempt to establish a causal link between off-exchange activity and closing price discovery and efficiency. *See* DERA Analysis, *supra,* note 8, at 1–2.

[131] *See* NYSE Report, at 1 and 9.

[132] *See id.* at 9. To provide context for these assertions, the NYSE Report included background information summarizing the existing closing auction processes, including both the procedures for the primary listing exchanges' closing auctions as well as the competing closing auctions operated by Nasdaq and NYSE Arca. NYSE also summarized BZX's proposal and the DERA Analysis. *See id.* at 3–9.

[133] *See id.* at 10; *see also supra* notes 65–66 and accompanying text.

[134] *See id.* at 10–11.

[135] *See id.* at 13.

[136] *See id.* at 14. The author of the NYSE Report also stated that a study he conducted providing evidence that higher levels of off-market trading under certain market structures can harm market quality may be relevant to the analysis of the potential impacts of BZX's proposal. *See id.* at 11. However, as the study the author cited analyzes continuous trading in Nasdaq stocks prior to the implementation of Regulation NMS (adopted in 2005 and which implemented significant changes to the regulatory framework of the equity markets), the Commission does not believe in this instance that it can be relied upon to make inferences regarding current market structure. *See generally* 70 FR 27496 (June 29, 2005).

[137] *See id.*

[138] *See id.* at 17. NYSE also argued that while the DERA Analysis cited to two published papers by Barclay and Hendershott to support using a regression-based approach to study the information content of closing prices, the DERA Analysis does not use the Barclay and Hendershott methodology.

[139] *See id.* at 14–15. NYSE suggested that an alternative approach to examine price continuity measures could provide some pertinent information regarding price discovery at the close. NYSE also stated that controlling for the size of the auction and the auction's initial imbalance may be important because price deviations that are the result of large imbalances or large demand are more likely to be indicative of informationally-driven price moves, which would be an indication of good price discovery, rather than liquidity-driven price moves, which would be an indication of bad price discovery. *See id.* at 15–16.

[140] *See id.* at 16. NYSE provided several examples that it stated illustrated the imprecision of the Price Reversal metric. *See id.* at 16–17.

asserted the Price Reaction metric is likewise ''imprecise and problematic'' because it is ''just an indicator-variable version'' of price reversal and thus ''imprecisely measures the imprecise Price Reversal metric.'' [141] NYSE asserted that the DERA Analysis' lack of a finding of statistically significant results ''is not surprising'' because the power of the Price Reaction test to find significant results is severely hampered.[142]

The Commission has considered the criticisms of NYSE with respect to the DERA Analysis. Importantly, the DERA Analysis was explicit regarding the limited scope of its analysis and does not assert that BZX's proposal would have no negative impact on price discovery of official closing prices. The DERA Analysis sought to explore the correlation of closing price discovery and efficiency with existing off-exchange MOC activity. It did not make any findings with respect to establishing a causal link between off-exchange MOC activity and closing price discovery and efficiency.[143] In addition, it was not designed to, nor does it purport to, opine on or address other aspects of BZX's proposal, including the potential impact on manipulation.[144] While NYSE also criticized the scope of the DERA Analysis for not considering instances where there was no closing auction, the sample in Table 4 of the DERA Analysis did, in fact, include all symbol-day observations, including those days where there was no closing auction, and this sample showed results consistent with DERA's overall findings.[145]

NYSE noted that the DERA Analysis ''cites to two published papers by Barclay and Hendershott as support for using a regression-based approach to study the information content of the closing price. However, the DERA Analysis does not actually use the Barclay-Hendershott methodology.'' [146] The DERA Analysis explains that, in order to maintain a consistent sample size across the different regression specifications, rather than take time-series weighted averages and running pure cross-sectional regressions, the DERA Analysis uses weighted panel regressions to perform the same estimation.[147] The DERA Analysis explains that the weighted panel regression approach produces the same Price Contribution estimates as the time-series weighted averages.[148] Furthermore, the panel regression approach allows for the analysis of within-stock—day-to-day—variation in Price Contributions, off-exchange MOC activity, as well as the controls.[149] Finally, the NYSE, in its critique of the DERA Analysis, does not explain how any differences in regression specifications would affect coefficient estimates or change the interpretation of these estimates.

With respect to NYSE's critique of the Price Contribution metric, the DERA Analysis controlled for contemporaneous absolute price volatility to account for the precise concerns identified by NYSE. Accordingly, the regression utilized in the DERA Analysis sought to isolate variations in Price Contributions that were not merely ''large arbitrary price swings'' that happened to be correlated with off-exchange MOC activity.[150] While NYSE also argues that the imprecision of the Price Reversal and Price Reaction metrics render it unlikely to yield statistically significant results, the Commission believes that the DERA Analysis included a sufficient sample size and variables to achieve statistical power.[151] Regarding the Price Reversal metric, the DERA Analysis used the same definition as Barclay and Hendershott, which found statistical relations using this measure, and the DERA Analysis used all stock-days over a quarter so as to not limit the analysis to a small sample.[152] Concerning the Price Reaction measurements, the Commission acknowledges that they may be imprecise, but many of the variables included in the regression, including auction share and market capitalization, are statistically correlated with price reactions, which suggests that, in this case, the definition of the dependent variable does not, on its own, create a lack of statistical power.[153]

Moreover, NYSE suggested that there are alternative approaches that would be useful in considering how market participants are likely to behave under alternative market structures and for analyzing how potential structures create incentives for market manipulation, as well as alternative measures that could provide pertinent information regarding price discovery at the close.[154] However, NYSE did not, in fact, provide any data or studies employing any of these methods. In the OIP, the Commission requested data, analyses or studies on a variety of relevant issues including arguments that BZX's proposal would harm price discovery in the primary listing exchanges' closing auctions, that BZX's proposal would affect the integrity or reliability of the official closing auction and the resulting closing price, and that BZX's proposal would increase the potential for manipulative activity.[155] However, despite asserting that it believed there are other relevant approaches for studying and analyzing matters relevant to these points that it could have used to respond to the Commission's solicitation of comments, NYSE did not do so.[156]

As discussed above, Nasdaq and NYSE concluded that existing over-the-counter price matching should not be considered a precedent for the proposal and described how they believed some over-the-counter MOC trades differed from those that would occur through Cboe Market Close.[157] While the utility of any consideration of the impact of off-exchange MOC execution services on price discovery on the primary listing exchanges may be more limited to the extent that such existing activity and services are not identical to the proposed Cboe Market Close, the Commission nonetheless believes that the DERA Analysis, while not conclusive, provides some insights in

[141] *See id.* at 17.

[142] *See id.*

[143] *See* DERA Analysis, *supra* note 8, at 1. *See also supra* note 130.

[144] *See infra* notes 204–211 and 213–226 and accompanying text (discussing in more detail NYSE's arguments relating to manipulation and the Commission's response).

[145] *See id.* at 11 and 16. *See also supra* notes 117–121 (discussing the Commission's response to NYSE and other commenters arguments relating to the potential scenario of all MOC orders being diverted to Cboe Market Close and the primary listing markets conducting no auction).

[146] *See* NYSE Report, at 15. *See also supra* note 138.

[147] *See* DERA Analysis, *supra* note 8, at 6, note 20.

[148] *See* DERA Analysis, *supra* note 8, at 6, note 20 and accompanying text.

[149] Footnote 22 of the DERA Analysis describes a robustness check using stock and day fixed effects. *See* DERA Analysis, *supra* note 8, at 8. Controlling for unobserved heterogeneity at the stock level using stock fixed effects would not be possible using pure cross-sectional regressions.

[150] *See* NYSE Report, at 14–15.

[151] Statistical power is the ability for statistical tests to identify differences across samples when those differences are indeed significant.

[152] In fact, Table 2 of the DERA Analysis finds strong statistically significant correlations between Price Reversals and contemporaneous closing price volatility. *See* DERA Analysis, *supra* note 8, at 15.

[153] The DERA Analysis included this metric to account for price continuations, which would also indicate a lack of price efficiency. *See* DERA Analysis, *supra* note 8, at 6–7.

[154] *See* NYSE Report at 14 and 15–16.

[155] *See* OIP, supra *note* 7, at 40210–40211.

[156] *See supra* note 154. *See also infra* note 209 (stating that NYSE did not provide any data, studies, or analyses supporting its arguments regarding the potential impacts of BZX's proposal on manipulative activity in response to the Commission's specific solicitation in this regard).

[157] *See supra* notes 61–66 and accompanying text (stating that Nasdaq asserted that broker-dealers may accept MOC orders and trade against them as principal and that NYSE asserted that market makers crossing orders on behalf of clients may be risking capital on such transactions).

considering whether there would likely be potential negative impacts on the price discovery process in the closing auctions of the primary listing exchanges that would occur from executing MOC orders on a venue other than the primary listing market. Accordingly, the Commission believes that the DERA Analysis lends support for the argument that there is no strong evidence to suggest that existing levels of fragmentation of closing auctions through off-exchange MOC activity negatively impacts the price discovery process on the primary listing exchanges. In addition, as a general matter, commenters failed to provide data, studies or analyses, as requested in the OIP,[158] that persuasively supported their assertions regarding the proposal's negative impact on price discovery on the closing auctions of the primary listing markets.

With regard to competing closing auctions, BZX's proposed Cboe Market Close is not a closing auction and the Commission believes, as do some commenters, that there are certain fundamental differences between BZX's proposed Cboe Market Close and existing competing closing auctions, such as those identified by NYSE and Nasdaq regarding the price discovery mechanisms of their competing, single-priced closing auctions, which produce closing prices independent from those determined through the primary listing exchanges' closing auctions.[159] Nevertheless, the Commission believes that considering such competing closing auctions, which already exist today, is useful to an analysis of the current proposal. Importantly, in such competing closing auctions, market participants may choose not only to submit MOC orders, but also price-setting LOC orders. As pointed out by BZX, this could affect the closing price on the primary listing market by potentially diverting LOC orders that contribute to price discovery away from the primary listing market's closing auction.[160] In contrast, BZX's proposal would not accept LOC orders, but rather only matches MOC orders, and thus is reasonably designed to not impact the closing price formation process.

Several commenters stated that the proposal could harm issuers, particularly small and mid-cap companies.[161] Many of these commenters argued that because of their view that the proposal undermines the reliability of the closing process and/or the official closing price it also poses a risk to listed companies and its shareholders.[162] Many of these commenters, some of which are issuers, stated that the current centralized closing auctions on the primary listing markets contribute meaningful liquidity to a company's stock, facilitates investment in the company, and helps to lower the cost of capital. Accordingly, these commenters expressed concern that the potential additional fragmentation caused by the proposal could negatively impact liquidity during the closing auction, causing detrimental effects to listed issuers.[163]

In addition, one commenter, SPDJI, argued that the proposal may also impact confidence in the pricing of benchmark indices as confidence in closing prices is a prerequisite for market participants to maintain confidence in the pricing of benchmark indices.[164] Accordingly, SPDJI asserted that because the closing price is a critical data point for investors, great caution should be taken in any changes to the closing auction.[165]

Moreover, some commenters argued that the centralization of liquidity at the open and close of trading, and how primary listing markets perform during the opening and closing, are important factors for issuers in determining where to list their securities, and the additional risk posed to listed companies from an unreliable or unrepresentative closing price and/or process could impact an issuer's decision where to list and/or cause companies to forgo going public.[166]

With regard to concerns about the impact of the proposal on issuers and their shareholders, BZX stated that the proposal ''would not adversely impact the trading environment for issuers and their securities'' because it ''specifically designed the [p]roposal so that it would not impact the very important price discovery function performed by the primary listing markets' closing auction'' by only matching paired MOC orders and not LOC orders and ensuring executions at the closing price.[167] BZX further stated that unlike the competing closing auctions run by NYSE Arca and Nasdaq, the proposal would not create

[158] *See* OIP, supra *note* 7, at 40210–40211.

[159] *See supra* notes 52–55 and accompanying text.

[160] Competing auctions could also potentially reduce the centralization of orders at the primary listing market's closing auction, which NYSE and Nasdaq argued was a critical element of the primary listing markets' closing auctions.

[161] *See* Nasdaq Letter 1, at 6–7; Nasdaq Letter 2, at 1–2 (asserting that as a result of fragmentation, small- and mid-cap companies are more susceptible to abrupt and disruptive price swings and therefore, centralizing liquidity at the close is important for these issuers and their investors); NYSE Letter 1, at 3; GTS Securities Letter 1, at 2–5; Customers Bancorp Letter; Orion Group Letter; CTS Corporation Letter; IMC Financial Letter, at 1–2; Southern Company Letter; Nobilis Health Letter; EDA Letter, at 1–2; Coupa Software Letter; Trade Desk Letter; Duffy/Meeks Letter, at 1; and Henry Schein Letter.

[162] *See* NYSE Letter 1, at 3 (arguing that the proposal is indifferent to the potential risks to public companies and that the closing is the most important data point for shareholders); IMC Financial Letter, at 1–2; Nobilis Health Letter; EDA Letter, at 1–2; Coupa Software Letter; Ethan Allen Letter; Trade Desk Letter; BioCryst Letter; Digimarc Letter; Duffy/Meeks Letter, at 1–2 (stating that public companies are concerned the proposal will have an unforeseen effect on the pricing of their companies' shares at the close, ultimately harming a critical measure of the company's value and harming its shareholders and asking the Commission to carefully consider the impacts of the proposal and whether such impacts would be necessary and helpful to public companies); NBT Bancorp Letter; Five9 Letter; Balchem Letter; Cree Letter; Henry Schein Letter; Corbus Letter; Global Payments Letter; CA Technologies Letter; Sirius Letter; Lam Letter; and PayPal Letter. Several issuers also asserted that decentralizing closing auctions will increase volatility, reduce visibility, and negatively impact liquidity for equity securities. *See e.g.,* Customers Bancorp Letter; Orion Group Letter; Nobilis Health Letter; Cardinal Health Letter; and Stewart Letter.

[163] *See* Customers Bancorp Letter; Orion Group Letter; CTS Corporation Letter; Southern Company Letter; Duffy/Meeks Letter, at 1–2 (stating that the proposal could cause a disruption to the closing auction process, which could lead to discouraging investors from participating in and having confidence in our markets); and Five9 Letter. In contrast, one commenter argued that the proposal would improve aggregate liquidity at the official closing price because the lower aggregate cost of trading would likely spur incremental increases in trading volumes. In addition, this commenter stated that the ability to enter MOC orders into Cboe Market Close with little risk of information leakage may attract an additional source of liquidity. *See* ViableMkts Letter, at 2.

[164] *See* SPDJI Letter, at 1–2 (stating that it relies solely on primary market auction prices to calculate the official closing index values, and that these closing index values play an important role in the markets, including use by portfolio managers to measure their funds' value and for use in calculating settlement prices for certain products); *see also* Coupa Software Letter; Trade Desk Letter; and Henry Schein Letter (stating that the official closing price is used to value their stocks for purposes of various indexes and mutual funds).

[165] *See* SPDJI Letter, at 2; *see also* NYSE Report, at 23–24. In contrast, one commenter acknowledged that while impacting the quality of the closing price is an objection that deserves close analysis, as the closing price is ''the most important price of the day,'' and would warrant rejection of the proposal, the commenter does not believe the proposal would harm the quality of the closing price. *See* Angel Letter, at 4.

[166] *See* NYSE Letter 1, at 3 and 9 (stating that no single data point is more important than the closing price to the company or its shareholders); GTS Securities Letter 1, at 3–5; EDA Letter, at 1; Duffy/Meeks Letter, at 1 (stating that the closing price is a critical measure of a company's value and that public companies view the closing auction on the primary listing exchange as a critical aspect of listing); and GTS Securities Letter 2, at 1–2. In addition, one commenter stated that further fragmenting the market would limit the quality and quantity of information on trading dynamics that the primary listing markets provide to their listed issuers. *See* CA Technologies Letter.

[167] *See* BZX Letter 1, at 2 and 4 and BZX Letter 2, at 10.

a price that deviates from the official closing price, and therefore, the proposal ''would not impact listed issuers or the market for their securities.'' [168]

The Commission believes that, because the proposal is reasonably designed to minimize any impact on the price discovery process, as described above, commenters' concerns regarding the effects on listed issuers, including small and mid-cap companies, are similarly mitigated. Commenters stated that the proposal would undermine the value and reliability of closing prices for securities and, as a result, the pricing of benchmark indices, and that decentralization of the closing auction would harm liquidity in their stock.[169] However, for the reasons discussed above,[170] the Commission believes that, because the proposal is reasonably designed to not impact price formation in closing auctions on the primary listing markets, the proposal is likewise reasonably designed to avoid the detrimental impacts that commenters have raised regarding the reliability of official closing prices, confidence in closing prices and pricing of benchmark indices, increased volatility, liquidity conditions for particular stocks, and the cost of raising capital. Further, as described above, because BZX will disseminate the amount of BZX matched shares well before the cut-off time for the primary markets' closing auctions, the Commission does not believe that the proposal would negatively impact visibility and transparency into the closing auction process on the primary listing exchanges.

Impact on Market Complexity and Operational Risk

Several commenters addressed the potential impact of the proposal on market complexity and operational risk that could occur if the proposal resulted in increased market fragmentation. Some of these commenters believed that the proposal would not introduce significant additional complexity or operational risk. For example, two commenters argued that the proposal could enhance the resiliency of the closing auction process by providing market participants an additional mechanism through which to execute orders at the official closing price in the event of a disruption at a primary listing market.[171] Another commenter argued that exchanges already have many market data feeds that firms must purchase to ensure that they have all of the information necessary to make informed execution decisions and that adding another data feed will not add complexity given the small amount of information that goes into the closing data feed and the current capabilities of market participants to re-aggregate multiple data feeds.[172]

In contrast, other commenters argued that the proposal would add unnecessary market complexity and operational risk. In particular, two commenters stated that the proposal would require market participants to monitor an additional data feed, the Bats Auction Feed, with one also stating that if additional exchanges adopted similar functionality to Cboe Market Close, it would require monitoring of even more data feeds.[173] These commenters argued that monitoring an additional data feed could increase operational risk by creating another point of failure at a critical time of the trading day.[174] One commenter also stated its view of the increased complexity involved in sending order flow to more than one exchange in short periods of time near the close of the trading day.[175] This commenter argued that the proposal increases operational risk and complexity at a critical point of the trading day by forcing market participants whose orders did not match in Cboe Market Close to quickly send MOC orders from one exchange to another before the cut-off time at the primary market closing auction.[176] This added complexity, GTS argued, puts additional stress on the systems of exchanges and increases the potential for disruptions.[177] Lastly, two commenters argued that the proposal could encourage other exchanges, broker-dealers, and alternative trading systems to offer similar processes, which would introduce undesirable fragmentation to the market and lead to operational challenges for investors and traders.[178]

In response, BZX argued that the proposal would not increase market complexity or operational risks.[179] Rather, BZX asserted that it would provide a way to address the single point of failure risk that exists for closing auctions conducted on the primary listing markets.[180] BZX argued that, despite the current system of designated auction backups, market participants can be confused about whether an exchange is in fact able to conduct a closing auction.[181] BZX believes, in the event there is an impairment at a primary listing market, Cboe Market Close could provide an alternative option for market participants to route MOC orders and still receive the official closing price.[182]

In addition, BZX added that modern software can easily and simply add volume data disseminated by the primary listing markets regarding the closing auction and data regarding matched MOC orders from the Cboe Market Close.[183] Moreover, BZX stated that it believed the 3:35 p.m. cut-off time would provide market participants with adequate time to receive any necessary information and to route any unmatched orders to the primary listing exchange.[184] Lastly, BZX stated that market participants would not be obligated to use Cboe Market Close and accordingly, may weigh the value of seeking an execution in Cboe Market Close against any perceived risks.[185]

[168] *See* BZX Letter 2, at 10.

[169] *See supra* notes 161–166 and accompanying text.

[170] *See supra* notes 110–160 and accompanying text.

[171] *See* SIFMA Letter 1, at 2 and ViableMkts Letter, at 3 (further stating that once BZX is able to process MOC orders, they would be in a position to develop the capability to offer a full backup closing auction process).

[172] *See* Clearpool Letter, at 4.

[173] *See* NYSE Letter 1, at 7 and IMC Letter, at 1. *See also* NYSE Letter 3, at 3 (stating that market participants that may not subscribe to multiple proprietary data feeds would be at a disadvantage and that the complexity would be further compounded when other exchanges adopt functionality similar to Cboe Market Close).

[174] *See* IMC Letter, at 1 and NYSE Letter 1, at 7. *See also* Ethan Allen Letter (arguing the proposal would add a layer of complexity).

[175] *See* GTS Securities Letter 1, at 6.

[176] *See* GTS Securities Letter 1, at 6. Furthermore, NYSE argued that in certain situations, investors may not be able to participate in a closing auction on NYSE American or NYSE Arca if they wait until after their order was cancelled by BZX to send in a market-on-close order to closing auctions on NYSE Arca and NYSE American. NYSE explained that in situations where there is an order imbalance priced outside the Auction Collars, orders on the side of the imbalance are not guaranteed to participate in the closing auctions on those two exchanges. Earlier submitted market-on-close orders have priority. *See* NYSE Letter 1, at 8.

[177] *See* GTS Securities Letter 1, at 6.

[178] *See* T. Rowe Price Letter, at 1–2. *See also* Nasdaq Letter 1, at 8 (stating that other exchanges may propose similar offerings but choose different pairing cut-off times which could further complicate investors' decisions and programming requirements).

[179] *See* BZX Letter 1, at 12 and BZX Letter 2, at 10–11.

[180] *See* BZX Letter 1, at 12 and BZX Letter 2, at 10–11.

[181] *See* BZX Letter 1, at 12.

[182] *See id.* In contrast, Nasdaq argued that Cboe Market Close could not serve as a back-up for a primary listing market suffering an impairment because it is not a price-discovering auction and would not operate in the absence of the auction it would be backing-up. *See* Nasdaq Letter 2, at 12.

[183] *See* BZX Letter 1, at 4 and BZX Letter 2, at 3.

[184] *See* BZX Letter 2, at 8.

[185] *See id.* at 8–9. In contrast, NYSE argued that it is irrelevant whether it is optional to send market

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The Cboe Market Close will offer market participants an additional venue to which they may send orders for execution at the official closing price and an additional data feed that some market participants may choose to monitor. However, as several commenters stated, many market participants already monitor multiple data feeds and the Commission believes that those market participants that would plan to monitor information disseminated by BZX relating to Cboe Market Close would likely already maintain systems and software that are able to aggregate such feeds.[186] Accordingly, the Commission does not believe that monitoring the Cboe Market Close feed or having an additional venue to submit MOC interest would significantly increase complexity or impose substantial burdens on market participants in such a manner as to render the proposal inconsistent with the Act. In addition, the Commission believes, as stated by BZX, that because BZX will disseminate the amount of paired shares well in advance of the order entry cut-off times for the primary listing markets' closing auctions, the proposal is reasonably designed to give market participants adequate time to review the necessary data, make informed decisions about closing order submission, and route orders to the primary listing exchange when desired. Further, the Commission believes, as BZX argued, that market participants have the ability to evaluate any potential risks that they believe may be associated with using the proposed functionality in any determination as to whether to send their orders to Cboe Market Close, such as the need to monitor additional data feeds, whether their orders were matched on BZX, or potentially having to send their MOC orders to more than one venue if they are not matched in Cboe Market Close.[187]

Manipulation

Several commenters addressed the issue of whether the proposal would facilitate manipulation of both the closing auctions on the primary listing markets, as well as continuous trading during the final minutes of the trading day. Some commenters did not believe it would do so. For example, one commenter stated that incentives to manipulate the closing price already exist and it is unlikely the proposal would result in increased manipulation of the market close.[188]

In contrast, several commenters asserted that the proposal raises a risk of manipulation, in part due to the asymmetry of information that would be disseminated, which would allow market participants to utilize informational advantages to their own benefit. For example, Nasdaq argued that information concerning the amount of orders matched through Cboe Market Close, would represent tradable information that market participants could use to ''game'' the closing crosses on the primary listing markets and undermine fair and orderly markets.[189] In particular, Nasdaq argued that its closing auction was designed to carefully balance the amount and timing of data released so as to reduce the risk of gaming, but that this new information regarding paired MOC orders could be used to gauge the depth of the market, the direction of existing imbalances, and the likely depth remaining at Nasdaq, creating gaming opportunities.[190] While Nasdaq acknowledged that information asymmetries exist today as a result of broker-dealer MOC order matching services, it argued that BZX, ''as a neutral platform, is more likely to gather orders from multiple brokers and enable a small number of participants to gain actionable asymmetric information,'' which could potentially change the Nasdaq closing price.[191] In response to claims from BZX that Nasdaq's closing auction is subject to the same information asymmetries and risks, Nasdaq argued that by having its data dissemination and cut-off time occur simultaneously, all market participants learn the imbalance at the same time, avoiding such risks.[192]

NYSE further asserted that the proposal could potentially provide some market participants, such as professional traders, with useful information that other market participants do not have, such as the direction of an imbalance, which could be used to influence the official closing price.[193]

Although not citing concerns regarding manipulation specifically, T. Rowe Price similarly argued that the proposal would lead to information asymmetries that could result in changes in continuous trading behavior leading into the market close as some market participants could be trading on information gathered from Cboe Market Close pairing results.[194] T. Rowe Price asserted that a market participant that is aware of the composition of volume paired through Cboe Market Close at 3:35 p.m. would be in a position to use that information to influence its trading behavior over the next ten to fifteen minutes leading in to the closing auction cut-off times on NYSE and Nasdaq respectively.[195] T. Rowe Price argued that, as a result, the proposal could not only impact price discovery in closing auctions on the primary listing markets it could also impact continuous trading behavior.[196]

In contrast, BZX argued that information asymmetries are inherent in trading, including the primary listing markets closing auctions.[197] For example, BZX argued that the current operation of d-Quotes on NYSE carries a risk of manipulation as it provides an informational advantage to NYSE DMMs and floor brokers, and allows d-Quotes to be entered, modified or cancelled up until 3:59:50 p.m. while other market participants are prohibited from entering, modifying or cancelling on-close orders after 3:45 p.m.[198] Lastly, BZX argued that the information

orders to the Cboe Market Close, as the analysis should turn on whether the mere existence of the Cboe Market Close would increase complexity and operational risk in the market. *See* NYSE Letter 3, at 2.

[186] In addition, in response to comments regarding the potential for other exchanges to adopt similar functionality that would require monitoring of even more data feeds, the Commission believes that those participants that would likely choose to monitor such data feeds likely already have the capability to monitor and aggregate information from multiple data feeds. Furthermore, the current BZX filing under consideration is a proposal from one exchange to disseminate information on one data feed and, as such, the Commission's analysis considers whether the instant proposal is consistent with the Act, rather than similar functionality that other exchanges may or may not propose in the future.

[187] *See supra* note 120.

[188] *See* Angel Letter, at 5.

[189] *See* Nasdaq Letter 1, at 8 and Nasdaq Letter 2, at 14.

[190] *See* Nasdaq Letter 1, at 8 and Nasdaq Letter 2, at 13–14 (arguing that market participants may use information gained regarding an imbalance in Cboe Market Close to detect the direction of the Nasdaq closing auction imbalance and trade against that information in either the closing auction or the continuous market).

[191] *See* Nasdaq Letter 2, at 14. Nasdaq argued that this would weaken the price discovery process, create a cycle of closing price deterioration, and increase volatility. *See id. But see supra* notes 110–160 and accompanying text discussing why the proposal is reasonably designed to not impact the price discovery process of the primary listing markets' closing auctions.

[192] *See id.*

[193] *See* NYSE Letter 1, at 6. However, ViableMkts argued that because these market participants would not know the full magnitude of the imbalance, it does not believe the proposal creates an incremental risk of manipulation. *See* ViableMkts Letter, at 5.

[194] *See* T. Rowe Price Letter, at 2–3.

[195] *See id.*

[196] *See id.*

[197] *See* BZX Letter 1, at 11–12 and BZX Letter 2, at 9.

[198] *See* BZX Letter 1, at 12 and BZX Letter 2, at 9. BZX also requested that the Commission review the appropriateness of NYSE's use of the d-Quote and its potential for price manipulation of NYSE's closing prices. *See* BZX Letter 1, at 9.

disseminated through the Bats Auction Feed would not provide any indication of whether the cancelling of a particular side of an order that has not been matched back to a market participant ''is meaningful or just happenstance,'' which limits this information's ability to create or increase manipulative activity.[199]

The Commission believes that the proposed rule change is consistent with the requirement of Section 6(b)(5) of the Act that the rules of a national securities exchange be designed to prevent fraudulent and manipulative acts and practices. The Commission believes information asymmetries as those described by commenters exist today and are inherent in trading, including with respect to closing auctions. For example, any party to a trade gains valuable insight regarding the depth of the market when an order is executed or partially executed. Further, on NYSE, not only DMMs, but NYSE floor brokers have access to closing auction imbalance information that is not simultaneously available to other market participants, far in advance of the NYSE order entry cut-off time. Specifically, pursuant to NYSE rules, floor brokers receive the amount of, and any imbalance between, MOC and marketable LOC interest every fifteen seconds beginning at 2:00 p.m. until 3:45 p.m.[200] Floor brokers are permitted to provide their customers with specific data points from this imbalance feed. In arguing for the Commission to approve its proposal to disseminate such information to floor brokers, NYSE stated that the imbalance information does not represent overall supply or demand for a security, but rather is a small subset of buying and selling interest that is subject to change before the close, nor is it actionable prior to 15 minutes before the close.[201] NYSE further asserted that it believed the information it disseminates to all participants at 3:45 p.m. is more material to investors, as it is more accurate, complete, and timely information.[202]

The Commission believes that the same arguments apply with respect to BZX's proposal. In particular, even if a market participant becomes aware of the direction of the imbalance for a security in Cboe Market Close as a result of receiving a cancellation of part or all of that participant's order, such information does not represent overall supply or demand for the security, is subject to change before the close, and is only one piece of information and likely less useful than other information regarding the close that would be available to market participants, such as the total matched amount of MOC shares that would be disseminated by BZX at 3:35 p.m. and available to all market participants on equal terms, as well as any imbalance information disseminated by the primary listing markets. While commenters argue that those who participate in Cboe Market Close would be able to discern the direction of an imbalance and use such information to manipulate the closing price, the Commission believes the utility of such gleaned information is limited. In particular, a market participant would only be able to determine the direction of the imbalance, and would have difficulty determining the magnitude of any imbalance, as it would only know the unexecuted size of its own order. In addition, the information would only be with regard to the pool of liquidity on BZX and would provide no insight into imbalances on the primary listing market, competing auctions, or off-exchange matching services which, as described above, can represent a significant portion of trading volume at the close. Likewise, while a market participant would be able to determine whether its own order made up a large or small percentage of the paired shares for a security in Cboe Market Close, it would not be able to determine the composition of same-side or contra-side MOC orders submitted to Cboe Market Close, nor would such information enable it to determine the composition of orders submitted to the primary listing market, competing auctions, or off-exchange matching services.[203] Therefore, the Commission believes the utility of this information is also limited. Accordingly, the Commission believes the proposal's potential for increased manipulation due to information asymmetries is negligible.

NYSE also argued that the proposal would increase potential manipulation for several reasons.[204] First, NYSE asserted that the potential for manipulative activity at the close would increase because primary listing exchange auctions would decrease in size and thus be easier to manipulate.[205] NYSE also argued that the proposal facilitates manipulative activity by providing an incentive for market participants to influence the closing price when they know they have been successfully matched on BZX to the benefit of the price of its already matched order.[206] Further, NYSE argued that market participants could manipulate information leading up to the close by entering orders into Cboe Market Close in an attempt to send a false signal regarding demand and subsequently reverse such positions after hours.[207]

The Commission recognizes that, with or without Cboe Market Close, the potential exists that there may be market participants who may seek to engage in manipulative or illegal trading activity, including with respect to closing prices.[208] Although no commenters provided specific data, analyses, or studies regarding manipulation generally or to support the assertion that the proposal could increase the potential for manipulative activity,[209] scholarly articles have suggested that closing auction manipulations are often characterized by large, unrepresentatively priced orders submitted in the final seconds of the auction.[210] Accordingly, the

[199] *See id.*

[200] *See* NYSE Rule 123C(6)(b).

[201] *See* Securities Exchange Act Release No. 62923 (September 15, 2010), 75 FR 57541, 57542 (September 21, 2010) (SR–NYSE–2010–20; SR–NYSEAmex–2010–25).

[202] *See id.*

[203] *See supra* notes 194–196 and accompanying text. While one commenter expressed concern that market participants that are aware of the composition of volume paired through Cboe Market Close would be in a position to use that information to influence their trading behavior leading up to the close, under BZX's proposal, BZX would only publish the size, and not the composition, of paired MOC shares, and that such disseminated information would be available to all market participants.

[204] *See* NYSE Letter 1, at 6 and NYSE Report, at 19–22. *See also* Americas Executions Letter (stating that the proposal creates new opportunities to possibly manipulate the close).

[205] *See* NYSE Letter 1, at 6.

[206] *See* NYSE Letter 1, at 6 and NYSE Report, at 19.

[207] *See* NYSE Report, at 19–20.

[208] NYSE also asserted that arbitrageurs will look for opportunities presented by Cboe Market Close to ''gam[e] the system.'' However, NYSE also acknowledged that, ''[i]t is hard to predict all of the ways in which, and the degree to which, this might occur because it will depend on a wide range of variables, including the degree of usage of the Bats close, the changes to order flow and liquidity provision in the primary market's closing mechanism, the profits realized from manipulation, and the vitality of market oversight.'' *See* NYSE Report, at 19–22.

[209] In the OIP, the Commission specifically solicited comments on the whether the proposal would increase the potential for manipulation and requested that commenters provide specific data, analyses, or studies for support to the extent possible. *See* OIP, *supra* note 7, at 40211. Although the NYSE Report criticized the DERA Analysis for not addressing concerns regarding manipulation, the potential impact of the proposal on manipulation was outside the intended scope of such analysis, *see supra* note 144, and NYSE did not, in response to the OIP request, provide any of its own specific data or purport to provide findings of any study or analyses in this area. *See* NYSE Report, at 19–22.

[210] *See* Carole Comerton-Forde and Talis J. Putnins, ''Measuring Closing Price Manipulation,''

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Commission believes that, while it is possible that the potential for manipulation could increase if the closing auctions on the primary listing exchanges decreased significantly in size, existing surveillance systems, should be able to continue to detect such activity.[211] With respect to NYSE's comment that the proposal would provide an incentive for market participants to influence the closing price when they know they have been successfully matched on BZX, market participants can attempt this today with respect to existing off-exchange MOC matching services (which are surveilled by FINRA) and any attempts to use Cboe Market Close to do this would result in such activity occurring on BZX, a national securities exchange with obligations under the Act to regulate and surveil its market. Similarly, entering non bona fide orders in an attempt to give the appearance of high demand is not a new form of potential manipulation unique to the proposal; rather, similar forms of market manipulation exist today and the Commission believes that current surveillance systems are designed to detect such activity.

Lastly, Nasdaq stated that it and other exchanges would need to develop new cross-market surveillance systems in order to address these risks.[212] NYSE also stated that there are no safeguards built-in to the proposal to prevent manipulation, and identifying manipulative activity would also become more difficult under the proposal due to the time difference between the Cboe Market Close and primary market closing auctions and the cross-market nature of the manipulation.[213] Further, NYSE argued that market participants may have legitimate reasons to want to reverse their trades that have been matched in Cboe Market Close by trading in the primary market auction, and thus, it would be difficult to distinguish between manipulative trading activity and legitimate 'positioning.'[214] GTS similarly argued that the proposal would make surveillance of the market close more difficult and expensive due to fragmentation of order flow across multiple markets.[215] In contrast, IEX argued that participation in the Cboe Market Close, followed by activity intended to affect the closing price on the primary market, would make manipulation of closing crosses as or more conspicuous than other trading patterns for which exchanges already conduct surveillance.[216] Two commenters also stated that the Consolidated Audit Trail would provide a new tool for detecting any such manipulation.[217]

In response, BZX made several arguments as to why it does not believe that the proposal creates a potential for increased manipulation.[218] BZX stated that, should the Commission approve the proposal, both it and FINRA, as well as other exchanges, would continue to surveil for manipulative activity and ''seek to punish those that engage in such behavior.''[219] In its final response letter, BZX reiterated that while it does not believe that the proposal would increase the potential for manipulation, it is ''committed to enhancing its current surveillance procedures and working with other [SROs], including FINRA, the NYSE, and Nasdaq, to ensure that any potential inappropriate trading activity is detected and prevented.''[220] Specifically, BZX stated that, consistent with its obligations as an SRO, it currently surveils all trading activity on its system including trading activity at the close, and intends to implement and enhance in-house surveillance processes designed to detect potential manipulative activity related to the Cboe Market Close.[221]

BZX also highlighted the cross-market surveillance that FINRA conducts on its behalf.[222] In particular, BZX stated that FINRA's comprehensive cross-market surveillance program can monitor for nefarious activity by a market participant across two or more markets and includes surveillance designed to detect activity geared towards manipulating a security's closing price.[223] Stating that it currently provides FINRA the necessary trade data to conduct such surveillance, BZX represented that it is also committed to work with FINRA on enhancements to the current cross market surveillance program to account for any potential manipulative activity by participants in Cboe Market Close and the primary listing markets' closing auctions.[224] BZX also stated that, as a member of the Intermarket Surveillance Group (''ISG''), it would share the necessary information concerning Cboe Market Close with NYSE and Nasdaq, as part of their participation in ISG, to allow them to properly surveil for potentially manipulative activity within their closing auctions.[225]

With respect to manipulative or illegal trading activity more broadly, self-regulatory organizations such as BZX and the primary listing markets have an obligation under the Act to surveil for manipulative activity on their markets. The Commission generally believes that existing self-regulatory organization surveillance and enforcement activity, and the measures that the Exchange has represented that it would take to surveil for and detect manipulative activity related to the proposal, would help to deter market participants who might otherwise seek to try and abuse Cboe Market Close or a closing auction on a primary listing exchange. The Commission expects that BZX will closely monitor Cboe Market Close and implement new or enhanced surveillance measures, as necessary, designed to identify potential manipulative behavior. Further, the Commission expects that potential violative conduct identified by BZX, FINRA, or any other national securities exchange would be investigated. With respect to NYSE's comment on the potential challenges posed that time differences or cross-market activity may pose in identifying manipulative activity,[226] these issues also exist today with respect to existing off-exchange MOC matching services. To the extent

Journal of Financial Intermediation 20, 135–158 (2011), available at: *https://www.sciencedirect.com/science/article/pii/S104295731000015X;* and Talis J. Putnins, ''Market Manipulation: A Survey,'' Journal of Economic Surveys, 26, 952–967 (2012), available at: *http://onlinelibrary.wiley.com/doi/10.1111/j.1467-6419.2011.00692.x/full.*

[211] *See infra* for discussion of the obligations under the Act of national securities exchanges, as self-regulatory organizations, to surveil for manipulative activity on their markets.

[212] *See* Nasdaq Letter 2, at 14.

[213] *See* NYSE Report, at 20–21 and NYSE Letter 1, at 6.

[214] *See* NYSE Report, at 19.

[215] *See* GTS Securities Letter 1, at 6; GTS Securities Letter 2, at 5.

[216] *See* IEX Letter, at 2.

[217] *See id.*, at 2–3 and Bollerman Letter, at 2.

[218] *See* BZX Letter 1, at 11–12 and BZX Letter 2, at 9.

[219] *See* BZX Letter 1, at 11 and BZX Letter 2, at 9.

[220] *See* BZX Letter 4, at 1.

[221] *Id.* In particular, BZX stated that the surveillance would include, among other things, monitoring for possible non bona fide order activity, such as the submission of orders for the purpose of gaining an informational advantage, the entry of large size orders on one side of the market, or other trading activity that would indicate a pattern or practice aimed at manipulating the closing auction. *Id.* Further, BZX committed to providing the Commission staff its surveillance plan and stated that it would implement that plan on the date that Cboe Market Close becomes available to market participants. *See id.* at 2.

[222] *See id.* Under regulatory services agreements, national securities exchanges, such as BZX, may enter into contracts with other regulatory entities, such as FINRA, to provide regulatory services on the exchange's behalf. Notwithstanding the existence of a regulatory services agreement, the exchange retains legal responsibility for the regulation of its members and its market and the performance of its regulatory services provider.

[223] *Id.*

[224] *Id.*

[225] *Id.*

[226] *See supra* note 213 and accompanying text.

that such attempted manipulative activity instead occurs on BZX, it would simply shift surveillance from FINRA to BZX, a national securities exchange with obligations under the Act to regulate and surveil its market. Further, with regard to the challenge of differentiating between legitimate trading and manipulative activity, this too exists today with regard to many different trading scenarios.

Impact on Competition

A number of commenters addressed the proposal's impact on competition. Seven commenters supporting the proposal stated that it would increase competition among exchanges for executions of orders at the close.[227] These commenters asserted that increased competition could result in reduced fees for market participants.[228] Three commenters characterized the primary listing markets as maintaining a ''monopoly'' on orders seeking a closing price with no market competition, which they argued has, and would continue to, result in a continual increase in fees for such orders if the proposal were not approved.[229] In addition, IEX argued that the proposal does not unduly burden competition as exchanges often attempt to compete by adopting functionality or fee schedules developed by competitors.[230] ViableMkts also asserted that the proposal is not fully competitive with closing auctions, as it does not accept priced orders or disseminate imbalance information.[231] Rather, it believed that the proposal competes with other un-priced orders in closing auctions which, in its view, is not ''destructive to the mission of the closing auction.'' [232]

In contrast, other commenters argued that the proposal would impose a burden on competition not necessary or appropriate in furtherance of the purposes of the Act, including by ''free-riding'' on the investments the primary listing markets have made in their closing auctions.[233] Specifically, NYSE asserted that the proposal is an unnecessary and inappropriate burden on competition as it would allow BZX to use the closing prices established through the auction of a primary listing market, without bearing any of the costs or risks associated with conducting a closing auction.[234] NYSE added that the existing exchange fees for closing auctions reflect the value created by the primary listing exchange's complex procedures and technology to determine the official closing price of a security.[235] NYSE emphasized that it has invested significantly in intellectual property and software to implement systems that facilitate orderly price discovery in the closing auction, as well as surveillance tools necessary to monitor activity leading up to, and in, the closing process.[236] Specifically, NYSE stated that operating an auction is the most technologically complicated function of an exchange that requires significant resources.[237] According to NYSE, BZX would be able to sell the official closing price established by a NYSE closing auction at a price point with which it could not realistically compete.[238]

NYSE also stated that the proposal differs from the Nasdaq and NYSE Arca competing auctions in securities not listed on their exchanges in that such auctions compete on a level playing field because they are independent price-discovery auction events that do not rely on prices established by the primary listing exchange and they serve as an alternative method of establishing an official closing price if a primary listing exchange is unable to conduct a closing auction due to a technology issue.[239]

Nasdaq also argued that the proposal would impose a burden on competition not necessary or appropriate in furtherance of the purposes of the Act. Specifically, Nasdaq believed that the proposal undermines intra-market competition, by removing orders from Nasdaq's auction book and prohibiting those orders from competing on Nasdaq, which Nasdaq argued is necessary for the exchange to arrive at the most accurate closing price.[240] Nasdaq also stated that, by diverting orders away from NYSE and Nasdaq, the proposal would detract from robust price competition and discovery that closing auctions ensure.[241] Nasdaq further argued that in order for BZX to meaningfully enhance competition, it would have to generate its own closing price, as opposed to merely utilizing the closing price generated by a primary listing market.[242] In addition, Nasdaq argued that price competition between exchanges is not as important a form of competition as innovation because price competition elevates fragmentation, sacrifices quote and order interaction, and, in the case of Cboe Market Close, undermines innovation.[243] Further, Nasdaq stated that BZX's comparisons to pegged orders, where the price is based upon reference data that does not originate on that exchange, was misplaced because all exchanges

[227] *See* PDQ Letter; Clearpool Letter, at 2; Virtu Letter, at 2; SIFMA Letter 1, at 2; IEX Letter, at 1; ViableMkts Letter, at 1–2; and Bollerman Letter, at 2.

[228] *See* PDQ Letter; Clearpool Letter, at 2; Virtu Letter, at 2; SIFMA Letter 1, at 2; IEX Letter, at 1; ViableMkts Letter, at 1; SIFMA Letter 2, at 2; and Bollerman Letter, at 2.

[229] *See* IEX Letter, at 3; Clearpool Letter, at 2; and ViableMkts Letter, at 1–2. However, one commenter also stated that it believes the fees charged by NYSE and Nasdaq for participating in their closing auctions are not excessive and there is no need for additional fee competition for executing orders at the official closing price. *See* GTS Securities Letter 1, at 5.

[230] *See* IEX Letter, at 3.

[231] *See* ViableMkts Letter, at 5.

[232] *See id.* ViableMkts also argued that the effect of this competition will most likely be increased volumes at the closing price because of lower marginal costs and the potential to attract new types of investors to transact at the closing price. *See id.*

[233] *See* NYSE Letter 1, at 9–10; NYSE Letter 3, at 1, 4–6 Nasdaq Letter 1, at 5–6 & 9; Nasdaq Letter 2, at 7–8 (reiterating its assertion that BZX is ''free-riding'' on the primary listing markets' investments in issuer relationships, real-time regulation, and closing cross technology); BioCryst Letter, at 2; Digimarc Letter, at 1–2; NBT Bancorp Letter, at 2; Balchem Letter, at 2; Cree Letter, at 2; Sirius Letter, at 2; Lam Letter, at 2; and PayPal Letter, at 1. *See also* Angel Letter, at 3 (calling for a rationalization of intellectual property protection in order to foster productive innovation).

[234] *See* NYSE Letter 1, at 9, NYSE Letter 2, at 1–3 (adding that the proposal is anti-competitive because it is proposing to sell at a lower price the closing prices produced through resources expended by NYSE), and NYSE Letter 3, at 5; and NYSE Letter 4, at 1. In contrast, one commenter argued that BZX would not be ''free-riding'' on the primary listing exchanges' price discovery process because it is ''a regular and accepted practice'' to match orders at reference prices. *See* SIFMA Letter 2, at 2.

[235] *See* NYSE Letter 1, at 9 and NYSE Letter 3, at 5 (stating that NYSE does not segregate the costs associated with building, testing, monitoring or maintaining its closing auction process and that the costs do not vary based on the volume of orders sent to the closing auction). NYSE also argued that the proposal impacts competition for listings, as issuers choose where to list their securities based on how primary listing exchanges are able to centralize liquidity and perform closing auctions. *See* NYSE Letter 1, at 9.

[236] *See* NYSE Letter 2, at 2. Moreover, NYSE stated that it dedicates resources to providing systems to DMMs necessary to facilitate the closing of trading as well as to floor brokers to enter and manage their customers' closing interest. *See id.*

[237] *See* NYSE Letter 3, at 5.

[238] *See id.* NYSE stated that the majority of costs associated with operating a closing auction are fixed costs. If NYSE were to reduce the fees charged for participating in its closing auction, NYSE stated that there likely would be other impacts on the exchange's overall fee structure. *See id.*

[239] *See* NYSE Letter 1, at 6; NYSE Letter 2, at 3–4; and NYSE Letter 3, at 5. In response, one commenter stated that these competing auctions were not originally proposed to only serve as a back-up to a primary listing markets' closing auction. *See* SIFMA Letter 2, at 2. In addition, one commenter stated that such competing auctions are not expressly limited to operating only when another primary listing exchange is experiencing a failure. *See* Bollerman Letter, at 3.

[240] *See* Nasdaq Letter 1, at 9.

[241] *See* Nasdaq Letter 1, at 10 and Nasdaq Letter 2, at 7–8. *See also supra* notes 27–109 and accompanying text (discussing comments on the proposal's impact on price discovery).

[242] *See id.,* at 13. *See also supra* notes 52–54 (discussing comments on the proposal's impact on price discovery and competing auctions and over-the-counter matching services).

[243] *See* Nasdaq Letter 2, at 8.

contribute to the prices to which such orders are pegged.[244] Nasdaq asserted that Cboe Market Close is not an analogous offering because BZX does not contribute to the closing price on a primary listing exchange.[245]

In response to commenters' contentions about competition, BZX asserted that the proposal would enhance rather than burden competition.[246] In this regard, BZX argued that its proposal would promote competition in the use of MOC orders at the official closing price.[247] Specifically, BZX stated that the proposal would have a positive impact on competition as it offers a price-competitive alternative that will not impact the price discovery process.[248]

BZX also challenged the assertion that it was ''free-riding'' on the primary listing exchanges' closing auctions.[249] In this regard, BZX argued that instead it was, on balance, providing a ''a materially better value to the marketplace'' in two ways: By not diverting price-forming limit orders away from the primary listing market; and by providing users with the official closing price because any other price would be undesirable to market participants and potentially harmful to price formation.[250] BZX further argued that there is precedent for an exchange to execute orders solely at reference prices while not also displaying priced orders for that security.[251] In addition, BZX stated that no rule or regulation provides the primary listing market with control over how other market participants use the official closing price in their matching engines or with regard to the pricing of their own products, such as mutual funds, ETFs, and indices.[252] BZX also stated that improving and mimicking functionality enhances the competitive dynamic amongst exchanges.[253]

Further, BZX asserted that the Commission has approved the operation of competing closing auctions, noting in particular the closing auctions on Nasdaq, NYSE Arca, and the American Stock Exchange.[254]

The Commission believes that the proposal does not impose any burden on competition not necessary or appropriate in furtherance of the Act; rather, it provides an alternative venue to which market participants may submit closing interest and receive the official closing price. The Commission believes that while BZX would not be conducting the closing auction that would determine the execution price for orders executed in Cboe Market Close, the availability of Cboe Market Close will inject competition into the closing process to the ultimate benefit of market participants generally, which could include price and execution quality competition. The Commission further believes that implementation of Cboe Market Close could incent other venues, including the primary listing exchanges as well as off-exchange matching venues, to continue to innovate and compete to attract MOC orders to their closing auctions, which may include lowering transaction fees, to the benefit of market participants generally. The proposal would also provide an opportunity for market participants to assess and compare their experience in seeking to execute MOC orders on different national securities exchanges, which would foster competition and that may enhance the quality and efficiency of MOC order executions. Ultimately, the Commission believes that the success of the Cboe Market Close in competing with the primary listing exchanges and off-exchange matching venues for MOC orders will depend on a variety of factors, including the quality of the MOC order execution services, the attendant risks, and the costs associated with such executions.

While the primary listing markets and other commenters argue that BZX is ''free riding'' on investments of the primary listing markets in the development and maintenance of the closing auction process and thus impeding competition in a manner inconsistent with the Act, the Commission believes that this form of burden on competition must be evaluated against the potentially enhanced competition that the proposal also provides, as discussed above.[255] Further, while NYSE and Nasdaq argue that their fees for closing executions reflect their costs of developing and operating the closing auctions, other commenters assert that the primary listing markets have taken advantage of the ''monopoly'' they have on orders seeking a closing price to impose high fees. In this regard, the Commission expects that the proposal, by introducing further competition, should result in a reduction of fees for such orders. This may result in benefits to investors generally. In addition, in the highly competitive environment of the current national market system with numerous exchanges competing for order flow, it is commonplace for exchanges to attempt to mimic or build upon various functionality of their competitors. Doing so does not result in the proposal imposing a competitive burden not necessary or appropriate in furtherance of the purposes of the Act.

In addition, both NYSE and Nasdaq referenced the Commission's disapproval of Nasdaq's proposal to create a Benchmark Order as support that BZX has not sufficiently satisfied its obligation to justify that the proposal is consistent with the Act and not an inappropriate burden on competition. NYSE argued that BZX essentially proposes to compete with broker-dealer agency order matching services.[256] NYSE asserted that the Commission disapproved Nasdaq's Benchmark Order in part because it would provide an exchange with an unfair advantage over competing broker-dealers, which was not consistent with Section 6(b)(8) of the Act.[257] Nasdaq further argued that the disapproval of its Benchmark Order proposal supports the assertion that an exchange must articulate how a proposed service is consistent with the

[244] *See id.,* at 13.

[245] *See id.*

[246] *See* BZX Letter 1, at 10–11 and BZX Letter 2, at 6–7.

[247] *See id.* BZX further argued that Nasdaq's assertion that the proposal would undermine competition amongst orders is misplaced because BZX believes that paired MOC orders, which are beneficiaries of price discovery and not price-setting orders do not impact interactions that take place on another exchange because orders compete with each other for executions within each individual exchange based on the parameters a market participant places on its orders. *See id.,* at 11.

[248] *See* BZX Letter 2, at 7.

[249] *See* BZX Letter 1, at 5 and BZX Letter 2, at 7.

[250] *See* BZX Letter 1, at 5.

[251] *See* BZX Letter 1, at 6 and BZX Letter 2, at 7 (describing NYSE's after hours crossing sessions which executes orders at the NYSE official closing price and the ISE Stock Exchange functionality that only executed orders at the midpoint of the NBBO and did not display orders).

[252] *See* BZX Letter 2, at 8.

[253] *See id.*

[254] *See* BZX Letter 1, at 6. *See also supra* notes 81–93 and accompanying text (discussing BZX's comments on competing closing auctions with regard to price discovery). In addition, in response to Nasdaq's contention that it is aware of no regulator in any jurisdiction that has sanctioned a diversion of orders from the primary market close, BZX stated the Ontario Securities Commission's approval of a similar proposal by Chi-X Canada ATS, which it said is currently owned by Nasdaq, to match MOC orders at the closing price established by the Toronto Stock Exchange. *See* Nasdaq Letter 1, at 10; BZX Letter 1, at 7; and BZX Letter 2, at 2 (stating that the Ontario Securities Commission stated that the proposal would not threaten the integrity of the price formation process and would pressure the Toronto Stock Exchange to competitively price executions during their closing auction).

[255] To the extent that the primary listing markets believe the proposal infringes on their intellectual property and innovations they have developed with regard to closing auctions, they have the ability to seek protection under applicable laws, as appropriate.

[256] *See* NYSE Letter 1, at 8.

[257] *See id.*

policy goals of the Act with respect to national securities exchanges.[258]

Likewise, SIFMA also referenced the Commission's disapproval of Nasdaq's proposal to create a Benchmark Order as support for its assertion that BZX is proposing to offer a function identical to that currently offered by broker-dealers, yet would benefit from regulatory immunity as well as the limits on liability contained in BZX Rule 11.16.[259] Specifically, SIFMA stated that, while it supports the proposal, it believes that as a condition of approval, BZX and the Commission should clarify in writing that Cboe Market Close would not be entitled to any application of regulatory immunity and that the Exchange should amend its Rule 11.16 to provide that Cboe Market Close would not be subject to the monetary limits on the Exchange's liability.[260]

With respect to regulatory immunity, SIFMA asserted that both courts and the Commission have stated that regulatory immunity applies only in situations where an exchange is exercising its regulatory authority over its member, pursuant to the Act.[261] SIFMA stated that because Cboe Market Close would not be a self-regulatory function whereby the exchange would be regulating its members, BZX should not be entitled to apply regulatory immunity for any losses arising from the functionality.[262] In addition, SIFMA stated that BZX Rule 11.16 currently limits the liability exposure of the exchange to its members.[263] SIFMA asserted that BZX's limits on liability set forth in Rule 11.16 ''bear no relation to the actual amount of financial loss that could result from an exchange malfunction.'' [264] SIFMA argued that the ''disparity is particularly acute'' with respect to the proposal because broker-dealers currently perform services akin to Cboe Market Close without a limitation on their liability.[265] Accordingly, SIFMA stated that, as a condition of operating Cboe Market Close, BZX should carve it out from the liability limits of Rule 11.16.[266]

BZX argued that, rather than looking to compete with broker-dealer services, it is seeking to compete on price with the primary listing markets' closing auctions.[267] In addition, BZX argued that, contrary to the assertions by NYSE and Nasdaq, its proposal does not implicate the same issues as Nasdaq's Benchmark Order proposal because the Commission's disapproval of that proposal rested primarily on its finding that it raised issues under the Market Access Rule.[268] BZX responded to SIFMA's comments on regulatory immunity and its limitation on liability rule by stating that the concerns raised were ''not germane to whether the [p]roposal is consistent with the Act,'' and further stated that it believed it would be inappropriate in the context of a filing on one proposed rule change to set a new standard on an issue that has broad application to all exchange services as well as National Market System Plans.[269] BZX also asserted that SIFMA did not provide any evidence to support its claim that its members have been disadvantaged by the exchange's limitation of liability rule as compared to limitation on liability provisions in a broker-dealer's contracts with its clients, which often disclaim all liability.[270]

The Commission believes, as acknowledged by BZX, that it is possible that BZX's proposal could divert some MOC orders from off-exchange matching services operated by broker-dealers onto a regulated exchange.[271] Broker-dealers and national securities exchanges currently compete with respect to a variety of functions and services that they offer to market participants within the current national market system. As such, the fact that a national securities exchange proposes to offer functionality that is similar to a service offered by a broker-dealer does not, in and of itself, render such functionality an inappropriate burden on competition. Rather, the proposal must be considered in the broader context of the existing competitive landscape and different regulatory structures applicable to broker-dealers and exchanges under the Act, respectively. With respect to BZX's proposal, the Commission believes that, on balance, in light of the differing requirements under the Act and the rules and regulations thereunder applicable to national securities exchanges and broker-dealers, the proposal does not pose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.

Further, the Commission believes that the issues raised by commenters regarding the judicial doctrine of regulatory immunity and rule-based limitations on liability are part of a broader policy issue regarding the different regulatory structures for exchanges and broker-dealers, and do not materially impact the Commission's analysis or finding regarding whether this proposal poses an unnecessary or inappropriate burden on competition.[272]

The Commission has taken the position that immunity from suit ''is properly afforded to the exchanges when engaged in their traditional self-regulatory functions—where the exchanges act as regulators of their members,'' including ''the core adjudicatory and prosecutorial functions that have traditionally been accorded absolute immunity, as well as other functions that materially relate to the exchanges' regulation of their members,'' but should not ''extend to functions performed by an exchange itself in the operation of its own market, or to the sale of products and services arising out of those functions.'' [273] The Court of Appeals for the Second Circuit recently reached a similar conclusion.[274] The Commission has also recognized that an exchange's invocation of immunity from suit should be examined on a '''case-by-case basis,' with 'the party asserting immunity bear[ing] the burden of demonstrating [an] entitlement to it.' '' [275] Whether and to what extent a court would consider BZX's additional functionality under the proposed rule to fall within an exchange's traditional regulatory functions depends on an assessment of the facts and circumstances of the particular allegations before it and is beyond the scope of the Commission's consideration of the proposed rule change pursuant to the Act.

IV. Conclusion

For the foregoing reasons, the Commission finds that the proposed rule change is consistent with the Act and the rules and regulations thereunder applicable to a national securities exchange.

[258] *See* Nasdaq Letter 1, at 5.

[259] *See* SIFMA Letter 3, at 2–4.

[260] *See id.* at 1.

[261] *See id.* at 2–3.

[262] *See id.* at 3.

[263] *See* BZX Rule 11.16.

[264] *See* SIFMA Letter 3, at 4.

[265] *See id.*

[266] *See id.*

[267] *See* BZX Letter 1, at 10.

[268] *See id.*, at 11.

[269] *See id.*

[270] *See* BZX Letter 3, at 5.

[271] *See* BZX Letter 2, at 11.

[272] The Commission also notes that MOC orders submitted to other exchanges' closing auctions would be subject to those exchanges' rules governing limitations on liability.

[273] Brief of the Securities and Exchange Commission, *Amicus Curiae,* No. 15–3057, *City of Providence* v. *Bats Global Markets, Inc.* (2d Cir.) (''*City of Providence* Amicus Br.''), at 22.

[274] *City of Providence* v. *Bats Global Markets, Inc.*, 878 F.3d 36 (2d Cir. 2017) (''When an exchange engages in conduct to operate its own market that is distinct from its oversight role, it is acting as a *regulated* entity—not a *regulator.* Although the latter warrants immunity, the former does not.'').

[275] *City of Providence* Amicus Br. at 21 (quoting *In re NYSE Specialists Secs. Litig.,* 503 F.3d 89, 96 (2d Cir. 2007)).

It is therefore ordered, pursuant to Section 19(b)(2) of the Act [276] that the proposed rule change (SR–BatsBZX–2017–34), as modified by Amendment No. 1, be, and hereby is, approved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[277]

Eduardo A. Aleman,

Assistant Secretary.

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SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–82514; File No. SR–OCC–2017–810]

Self-Regulatory Organizations; The Options Clearing Corporation; Notice of Filing of Advance Notice Concerning Updates to and Formalization of OCC's Recovery and Orderly Wind-Down Plan

January 17, 2018.

Pursuant to Section 806(e)(1) of Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act, entitled Payment, Clearing and Settlement Supervision Act of 2010 (''Clearing Supervision Act'') [1] and Rule 19b–4(n)(1)(i) under the Securities Exchange Act of 1934 (''Act''),[2] notice is hereby given that on December 8, 2017, The Options Clearing Corporation (''OCC'') filed with the Securities and Exchange Commission (''Commission'') an advance notice as described in Items I, II and III below, which Items have been prepared by OCC. The Commission is publishing this notice to solicit comments on the advance notice from interested persons.

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

This advance notice is filed in connection with a proposed change to formalize and update OCC's Recovery and Orderly Wind-Down Plan (''RWD Plan'' or ''Plan''), consistent with the requirement applicable to OCC in Rule 17Ad–22(e)(3)(ii).

The RWD Plan was included as confidential Exhibit 5 of the filing.[3] The proposed change is described in detail in Item II below. All terms with initial capitalization not defined herein have the same meaning as set forth in OCC's By-Laws and Rules.[4]

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

In its filing with the Commission, OCC included statements concerning the purpose of and basis for the advance notice and discussed any comments it received on the advance notice. The text of these statements may be examined at the places specified in Item IV below. OCC has prepared summaries, set forth in sections A and B below, of the most significant aspects of these statements.

(A) Clearing Agency's Statement on Comments on the Advance Notice Received From Members, Participants or Others

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

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

Description of the Proposed Change

Background

On September 28, 2016 the Commission adopted amendments to Rule 17Ad–22 [5] and added new Rule 17Ab2–2 [6] pursuant to Section 17A of the Securities Exchange Act of 1934 [7] and the Payment, Clearing, and Settlement Supervision Act of 2010 (''Payment, Clearing and Settlement Supervision Act'') [8] to establish enhanced standards for the operation and governance of those clearing agencies registered with the Commission that meet the definition of a ''covered clearing agency,'' as defined by Rule 17Ad–22(a)(5) [9] (collectively, the new and amended rules are herein referred to as ''CCA'' rules). The CCA rules require that covered clearing agencies, among other things:

> [E]stablish, implement, maintain and enforce written policies and procedures reasonably designed to . . . [m]aintain a sound risk management framework for comprehensively managing legal, credit, liquidity, operational, general business, investment, custody, and other risks that arise in or are borne by the [CCA], which . . . [i]ncludes plans for the recovery and orderly wind-down of the [CCA] necessitated by credit losses, liquidity shortfalls, losses from general business risk, or any other losses.[10]

OCC is defined as a covered clearing agency under the CCA rules, and therefore is subject to the requirements of the CCA rules, including Rule 17Ad–22(e)(3).[11]

Proposed RWD Plan

OCC is proposing to update, formalize and adopt its RWD Plan.[12] Consistent with the Commission's guidance concerning the requirements of Rule 17Ad–22(e)(3)(ii), the purpose of the proposed RWD Plan is to (i) demonstrate that OCC has considered the scenarios which may potentially prevent it from being able to provide its ''Critical Services'' (defined below) as a going-concern,[13] (ii) provide appropriate plans for OCC's recovery or orderly wind-down based on the results of such consideration; [14] and (iii) impart to relevant authorities the information reasonably anticipated to be necessary for purposes of recovery and orderly wind-down planning.[15]

As discussed in greater detail below, in preparing the proposed Plan, OCC was informed by relevant guidance from not only from OCC's regulators, but also from certain international organizations. Within the framework of this guidance, OCC has drafted the proposed Plan to reflect OCC's specific characteristics, including its ownership, organizational, and operational structures, as well as OCC's size and systemic importance relative to the products that its clears.[16]

The proposed RWD Plan consists of eight chapters. A description of each of the first seven chapters of the proposed Plan is provided below (Chapter 8 of the proposed plan consists of a series of appendices containing supporting material).

Chapter 1: Executive Summary

Chapter 1 of the RWD Plan would provide an executive summary and overview of the proposed Plan. Chapter 1 would begin by acknowledging OCC's

[276] 15 U.S.C. 78s(b)(2).

[277] 17 CFR 200.30–3(a)(12).

[1] 12 U.S.C. 5465(e)(1).

[2] 17 CFR 240.19b–4(n)(1)(i).

[3] OCC has filed a proposed rule change with the Commission in connection with the proposed change. *See* SR–OCC–2017–021.

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

[5] 17 CFR 240.17Ad–22.

[6] 17 CFR 240.17Ab2–2.

[7] 15 U.S.C. 78q–1.

[8] 12 U.S.C. 5461 et. seq.

[9] 17 CFR 240.17Ad–22(a)(5).

[10] 17 CFR 240.17Ad–22(e)(3)(ii).

[11] *Id.*

[12] OCC maintains a recovery and orderly wind-down plan that was prepared in response to evolving international standards for CCPs. The existing version of OCC's recovery and orderly wind-down plan was prepared in advance of the adoption of the CCA rules.

[13] As defined by Rule 17Ad–22(e)(3)(ii), those scenarios are: ''credit losses, liquidity shortfalls, losses from general business risks and other losses.'' 17 CFR 240.17Ad–22(e)(3)(ii).

[14] *See* Standards for Covered Clearing Agencies, 81 FR 70786, 70810 (Oct. 13, 2016).

[15] *Id.*

[16] *See* 81 FR at 70808.