

Required fields are shown with yellow backgrounds and asterisks.

Page 1 of * <input type="text" value="64"/>	SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549 Form 19b-4	File No.* SR - <input type="text" value="2016"/> - * <input type="text" value="23"/>	Amendment No. (req. for Amendments *) <input type="text"/>
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Filing by ISE Gemini, LLC  
Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

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

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

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

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

A proposal to amend ISE Gemini Rule 723, concerning its Price Improvement Mechanism.

**Contact Information**

Provide the name, telephone number, and e-mail address of the person on the staff of the self-regulatory organization prepared to respond to questions and comments on the action.

First Name \*  Last Name \*

Title \*

E-mail \*

Telephone \*  Fax

**Signature**

Pursuant to the requirements of the Securities Exchange Act of 1934,

has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

(Title \*)

Date  By

NOTE: Clicking the button at right will digitally sign and lock this form. A digital signature is as legally binding as a physical signature, and once signed, this form cannot be changed.

SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

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

**Form 19b-4 Information \***

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The self-regulatory organization must provide all required information, presented in a clear and comprehensible manner, to enable the public to provide meaningful comment on the proposal and for the Commission to determine whether the proposal is consistent with the Act and applicable rules and regulations under the Act.

**Exhibit 1 - Notice of Proposed Rule Change \***

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The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

**Exhibit 1A- Notice of Proposed Rule Change, Security-Based Swap Submission, or Advance Notice by Clearing Agencies \***

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The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change, security-based swap submission, or advance notice being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

**Exhibit 2 - Notices, Written Comments, Transcripts, Other Communications**

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Exhibit Sent As Paper Document

Copies of notices, written comments, transcripts, other communications. If such documents cannot be filed electronically in accordance with Instruction F, they shall be filed in accordance with Instruction G.

**Exhibit 3 - Form, Report, or Questionnaire**

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Exhibit Sent As Paper Document

Copies of any form, report, or questionnaire that the self-regulatory organization proposes to use to help implement or operate the proposed rule change, or that is referred to by the proposed rule change.

**Exhibit 4 - Marked Copies**

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The full text shall be marked, in any convenient manner, to indicate additions to and deletions from the immediately preceding filing. The purpose of Exhibit 4 is to permit the staff to identify immediately the changes made from the text of the rule with which it has been working.

**Exhibit 5 - Proposed Rule Text**

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The self-regulatory organization may choose to attach as Exhibit 5 proposed changes to rule text in place of providing it in Item I and which may otherwise be more easily readable if provided separately from Form 19b-4. Exhibit 5 shall be considered part of the proposed rule change.

**Partial Amendment**

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If the self-regulatory organization is amending only part of the text of a lengthy proposed rule change, it may, with the Commission's permission, file only those portions of the text of the proposed rule change in which changes are being made if the filing (i.e. partial amendment) is clearly understandable on its face. Such partial amendment shall be clearly identified and marked to show deletions and additions.

1. Text of the Proposed Rule Change

(a) ISE Gemini, LLC (the “Exchange” or “ISE Gemini”), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)<sup>1</sup> and Rule 19b-4 thereunder,<sup>2</sup> is filing with the Securities and Exchange Commission (“SEC” or “Commission”) a proposal to amend ISE Gemini Rule 723, concerning its Price Improvement Mechanism (“PIM”). Certain aspects of PIM are currently operating on a pilot basis (“Pilot”), which is set to expire on January 18, 2017.<sup>3</sup>

The Pilot concerns (i) the termination of the exposure period by unrelated orders; and (ii) no minimum size requirement of orders eligible for PIM. ISE Gemini seeks to make the Pilot permanent, and also proposes to change the requirements for providing price improvement for Agency Orders of less than 50 option contracts.

A notice of the proposed rule change for publication in the Federal Register is attached as Exhibit 1. The text of the proposed rule change is attached as Exhibit 5.

(b) Not applicable.

(c) Not applicable.

2. Procedures of the Self-Regulatory Organization

The proposed rule change was approved by the Board of Directors of the Exchange on November 18, 2016. No other action is necessary for the filing of the rule change.

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<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

<sup>3</sup> See Securities Exchange Act Release No. 78343 (July 15, 2016), 81 FR 47483 (July 21, 2016) (SR-ISEGemini-2016-07).

Questions and comments on the proposed rule change may be directed to:

Andrew Madar  
Senior Associate General Counsel  
Nasdaq, Inc.  
301-978-8420.

3. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

a. Purpose

The purpose of this proposed rule change is to make permanent certain pilots within Rule 723, relating to PIM. Paragraph .03 of the Supplementary Material to Rule 723 provides that there is no minimum size requirement for orders to be eligible for PIM. Paragraph .05 concerns the termination of the exposure period by unrelated orders. In addition, ISE Gemini proposes to modify the requirements for PIM auctions involving less than 50 contracts where the National Best Bid and Offer ("NBBO") is only \$0.01 wide.

Background

The Exchange adopted PIM as part of its application to be registered as a national securities exchange under its previous name of Topaz Exchange, LLC ("Topaz").<sup>4</sup> In

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<sup>4</sup> See Securities Exchange Act Release No. 70050 (July 26, 2013), 78 FR 46622 (August 1, 2013) (File No. 10-209) ("Exchange Approval Order"). The Exchange subsequently changed its name to ISE Gemini. See Securities Exchange Act Release No. 71586 (February 20, 2014), 79 FR 10861 (February 26, 2014) (SR-Topaz-2014-06).

In addition to the Exchange Approval Order and the filings cited above, the following proposed rule changes have been submitted in connection with PIM. See Securities Exchange Act Release Nos. 79253 (November 7, 2016), 81 FR 79540 (ISEGemini-2016-13); 78343 (July 15, 2016), 81 FR 47483 (July 21, 2016) (SR-ISE Gemini-2016-07); 75481 (July 17, 2015), 80 FR 43826 (July 23, 2015) (SR-ISE Gemini-2015-13); 73317 (October 8, 2014), 79 FR 61911 (October 15, 2014) (SR-ISEGemini-2014-26); 72553 (July 8, 2014), 79 FR 40813 (July 8, 2014) (SR-ISE Gemini-2014-19); 72466 (June 25, 2014), 79 FR 37378 (July 1,

approving PIM, the Commission noted that it was largely based on a similar functionality offered by the International Securities Exchange, LLC (“ISE”).<sup>5</sup> The PIM is a process that allows Electronic Access Members (“EAM”) to provide price improvement opportunities for a transaction wherein the Member seeks to execute an agency order as principal or execute an agency order against a solicited order (a “Crossing Transaction”). A Crossing Transaction is comprised of the order the EAM represents as agent (the “Agency Order”) and a counter-side order for the full size of the Agency Order (the “Counter-Side Order”). The Counter-Side Order may represent interest for the Member’s own account, or interest the Member has solicited from one or more other parties, or a combination of both.

Rule 723 sets forth the criteria pursuant to which the PIM is initiated. Specifically, a Crossing Transaction must be entered only at a price that is equal to or better than the national best bid or offer (“NBBO”) and better than the limit order or quote on the Exchange order book on the same side of the Agency Order. The Crossing Transaction may be priced in one-cent increments. The Crossing Transaction may not be canceled, but the price of the Counter-Side Order may be improved during the exposure period.

Rule 723 also sets forth requirements relating to the exposure of orders in PIM and the termination of the exposure period. Upon entry of a Crossing Transaction into the Price Improvement Mechanism, a broadcast message that includes the series, price and size of the Agency Order, and whether it is to buy or sell, will be sent to all

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2014) (SR-ISE Gemini-2014-17); 70636 (October 9, 2013), 78 FR 62838 (October 22, 2013) (SR-Topaz-2013-05).

<sup>5</sup> See Exchange Approval Order, supra note 4.

Members. This broadcast message will not be included in the ISE disseminated best bid or offer and will not be disseminated through OPRA. Members will be given 500 milliseconds to indicate the size and price at which they want to participate in the execution of the Agency Order (“Improvement Orders”). Improvement Orders may be entered by all Members for their own account or for the account of a Public Customer in one-cent increments at the same price as the Crossing Transaction or at an improved price for the Agency Order, and for any size up to the size of the Agency Order. During the exposure period, Improvement Orders may not be canceled, but may be modified to (1) increase the size at the same price, or (2) improve the price of the Improvement Order for any size up to the size of the Agency Order. During the exposure period, responses (including the Counter Side Order, Improvement Orders, and any changes to either) submitted by Members shall not be visible to other auction participants. The exposure period will automatically terminate (i) at the end of the 500 millisecond period, (ii) upon the receipt of a market or marketable limit order on the Exchange in the same series, or (iii) upon the receipt of a nonmarketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange.

Rule 723 also describes how orders will be executed at the end of the exposure period. Specifically, at the end of the exposure period, the Agency Order will be executed in full at the best prices available, taking into consideration orders and quotes in the Exchange market, Improvement Orders, and the Counter-Side Order. The Agency Order will receive executions at multiple price levels if there is insufficient size to execute the entire order at the best price. At a given price, Priority Customer interest is

executed in full before Professional Orders and any other interest of Members (i.e., proprietary interest from Electronic Access Members and Exchange market makers).

After Priority Customer interest at a given price, Professional Orders and Members' interest will participate in the execution of the Agency Order based upon the percentage of the total number of contracts available at the price that is represented by the size of the Members' interest.

In the case where the Counter-Side Order is at the same price as Members' interest (after Priority Customer interest at a given price), the Counter-Side order will be allocated the greater of one (1) contract or forty percent (40%) of the initial size of the Agency Order before other Member interest is executed. Upon entry of Counter-Side orders, Members can elect to automatically match the price and size of orders, quotes and responses received during the exposure period up to a specified limit price or without specifying a limit price. In this case, the Counter-Side order will be allocated its full size at each price point, or at each price point within its limit price if a limit is specified, until a price point is reached where the balance of the order can be fully executed. At such price point, the Counter-Side order shall be allocated the greater of one contract or forty percent (40%) of the original size of the Agency Order, but only after Priority Customer Orders at such price point are executed in full. Thereafter, all other orders, Responses, and quotes at the price point will participate in the execution of the Agency Order based upon the percentage of the total number of contracts available at the price that is represented by the size of the order, Response or quote. An election to automatically match better prices cannot be cancelled or altered during the exposure period.

When a market order or marketable limit order on the opposite side of the market from the Agency Order ends the exposure period, it will participate in the execution of the Agency Order at the price that is mid-way between the best counter-side interest and the NBBO, so that both the market or marketable limit order and the Agency Order receive price improvement. Transactions will be rounded, when necessary, to the \$.01 increment that favors the Agency Order.

#### The Pilot

As described above, two components of PIM are currently operating on a pilot basis: (i) the termination of the exposure period by unrelated orders; and (ii) no minimum size requirement of orders entered into PIM. The pilot has been extended until January 18, 2017.<sup>6</sup>

As described in greater detail below, during the pilot period the Exchange has been required to submit, and has been submitting, certain data periodically as required by the Commission, to provide supporting evidence that, among other things, there is meaningful competition for all size orders within the PIM, that there is significant price improvement for all orders executed through the PIM, and that there is an active and liquid market functioning on the Exchange both within PIM and outside of the Auction mechanism. The Exchange has also analyzed the impact of certain aspects of the Pilot; for example, situation in which PIM is terminated prematurely by an unrelated order.

The Exchange now seeks to have the Pilot approved on a permanent basis. In addition, the Exchange proposes to modify the scope of PIM so that, with respect to PIM orders for less than 50 option contracts, members will be required to receive price

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<sup>6</sup> See note 3 above.



improvement of at least one minimum price improvement increment over the NBBO if the NBBO is only \$0.01 wide. For orders of 50 contracts or more, or if the difference in the NBBO is greater than \$0.01, the requirements for price improvement remain the same.

#### Price Improvement for Orders Under 50 Contracts

Currently, the PIM may be initiated if all of the following conditions are met. A Crossing Transaction must be entered only at a price that is equal to or better than the NBBO and better than the limit order or quote on the Exchange order book on the same side of the Agency Order. The Crossing Transaction may be priced in one-cent increments. The Crossing Transaction may not be canceled, but the price of the Counter-Side Order may be improved during the exposure period.

ISE Gemini proposes to amend Rule 723(b) to require Electronic Access Members to provide at least \$0.01 price improvement for an Agency Order if that order is for less than 50 contracts and if the difference between the NBBO is \$0.01. For the period beginning January 19, 2017 until a date specified by the Exchange in a Regulatory Information Circular, which date shall be no later than April 15, 2017, ISE Gemini will adopt a member conduct standard to implement this requirement.<sup>7</sup> Under this provision, ISE Gemini is proposing to amend the Auction Eligibility Requirements to require that, if

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<sup>7</sup> The Exchange notes that its indirect parent company, U.S. Exchange Holdings, Inc. has been acquired by Nasdaq, Inc. See Securities Exchange Act Release No. 78119 (June 21, 2016), 81 FR 41611 (June 27, 2016) (SR-ISEGemini-2016-05). Pursuant to this acquisition, ISE Gemini platforms are migrating to Nasdaq platforms, including the platform that operates PIM. ISE Gemini intends to retain the proposed member conduct standard requiring price improvement for options orders of under 50 contracts where the difference between the NBBO is \$0.01 until the ISE Gemini platforms and the corresponding symbols are migrated to the platforms operated by Nasdaq, Inc.

the Agency Order is for less than 50 option contracts, and if the difference between the NBBO is \$0.01, an Electronic Access Member shall not enter a Crossing Transaction unless such Crossing Transaction is entered at a price that is one minimum price improvement increment better than the NBBO on the opposite side of the market from the Agency Order, and better than any limit order on the limit order book on the same side of the market as the Agency Order. This requirement will apply regardless of whether the Agency Order is for the account of a public customer, or where the Agency Order is for the account of a broker dealer or any other person or entity that is not a Public Customer. Failure to provide such price improvement will subject Members to the fines set forth in Rule 1614(d)(4) of the International Securities Exchange, LLC (“ISE”).<sup>8</sup>

The Exchange will conduct electronic surveillance of PIM to ensure that members comply with the proposed price improvement requirements for option orders of less than 50 contracts. Specifically, using an electronic surveillance system that produces alerts of potentially unlawful PIM orders, the Exchange will perform a frequent review of member firm activity to identify instances of apparent violations. Upon discovery of an apparent violation, the Exchange will attempt to contact the appropriate member firm to

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<sup>8</sup> In a separate proposed rule change, ISE is proposing to adopt similar price improvement requirements for orders of less than 50 contracts for its PIM. As part of that rule change, ISE is proposing to amend ISE Rule 1614 (Imposition of Fines for Minor Rule Violations) to add Rule 1614(d)(4), which will provide that, beginning January 19, 2017, any Member who enters an order into PIM for less than 50 contracts, while the National Best Bid or Offer spread is \$0.01, must provide price improvement of at least one minimum price improvement increment better than the NBBO on the opposite side of the market from the Agency Order, which increment may not be smaller than \$0.01. Failure to provide such price improvement will result in members being subject to the following fines: \$500 for the second offense, \$1,000 for the third offense, and \$2,500 for the fourth offense. Subsequent offenses will subject the member to formal disciplinary action. ISE will review violations on a monthly cycle to assess these violations.

communicate the specifics of the apparent violation with the intent to assist the member firm in preventing submission of subsequent problematic orders. The Exchange will review the alerts monthly and determine the applicability of the MRVP and appropriate penalty. The Exchange is not limited to the application of the MRVP, and may at its discretion, choose to escalate a matter for processing through the Exchange's disciplinary program.

The Exchange is also proposing a systems-based mechanism to implement this price improvement requirement, which shall be effective following the migration of a symbol to INET, the platform operated by Nasdaq, Inc. that will also operate the PIM. Under this provision, if the Agency Order is for less than 50 option contracts, and if the difference between the National Best Bid and National Best Offer ("NBBO") is \$0.01, the Crossing Transaction must be entered at one minimum price improvement increment better than the NBBO on the opposite side of the market from the Agency Order and better than the limit order or quote on the ISE order book on the same side of the Agency Order.

The Exchange believes that these changes to PIM may provide additional opportunities for Agency Orders of under 50 option contracts to receive price improvement over the NBBO where the difference in the NBBO is \$0.01 and therefore encourage the increased submission of orders of under 50 option contracts. The Exchange notes that the statistics for the current pilot, which include, among other things, price improvement for orders of less than 50 option contracts under the current auction eligibility requirements, show relatively small amounts of price improvement for such

orders. ISE Gemini believes that the proposed requirements will therefore increase the price improvement that orders of under 50 option contracts may receive in PIM.

The Exchange will retain the current requirements for auction eligibility where the Agency Order is for 50 option contracts or more, or if the difference between the NBBO is greater than \$0.01. Accordingly, the Exchange is amending the Auction Eligibility Requirements to state that, if the PIM Order is for 50 option contracts or more or if the difference between the NBBO is greater than \$0.01, the Crossing Transaction must be entered only at a price that is equal to or better than the NBBO and better than the limit order or quote on the Exchange order book on the same side as the Agency Order.

#### No Minimum Size Requirement

Supplemental Material .03 to Rule 723 provides that, as part of the current Pilot, there will be no minimum size requirement for orders to be eligible for the Auction.<sup>9</sup> As with the ISE PIM, the Exchange proposed the no-minimum size requirement for the PIM because it believed that this would provide small customer orders with the opportunity to participate in the PIM and to receive corresponding price improvement. In initially approving the ISE PIM, the Commission noted that the no minimum size requirement provided an opportunity for more market participants to participate in the auction.<sup>10</sup> The

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<sup>9</sup> The provision relating to the no minimum size requirement also requires the Exchange to submit certain data, periodically as required by the Commission, to provide supporting evidence that, among other things, there is meaningful competition for all size orders within the PIM, that there is significant price improvement for all orders executed through the PIM, and that there is an active and liquid market functioning on the Exchange outside of the PIM. Any raw data which is submitted to the Commission will be provided on a confidential basis.

<sup>10</sup> See Securities Exchange Act Release No. 50819 (December 8, 2004), 69 FR 75093 (December 15, 2004) (SR-ISE-2003-06) (“ISE PIM Approval Order”).

Commission also stated that it would evaluate PIM during the Pilot Period to determine whether it would be beneficial to customers and to the options market as a whole to approve any proposal requesting permanent approval to permit orders of fewer than 50 contracts to be submitted to the PIM.<sup>11</sup>

As noted above, throughout the Pilot, the Exchange has been required to submit certain data periodically to provide supporting evidence that, among other things, there is meaningful competition for all size orders within the PIM, that there is significant price improvement for all orders executed through the PIM, and that there is an active and liquid market functioning on the Exchange both within PIM and outside of the Auction mechanism.

The Exchange believes that the data gathered since the approval of the Pilot establishes that there is liquidity and competition both within PIM and outside of PIM, and that there are opportunities for significant price improvement within PIM.<sup>12</sup>

In the period between January and June 2016, the PIM executed a total of 297,239 contracts, which represented 0.62% of total ISE Gemini contract volume and 0.01% of industry volume. The percent of ISE Gemini volume traded in PIM ranged from 0.47% in May 2016 to 0.69% in February 2016.

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<sup>11</sup> Id.

<sup>12</sup> Specifically, the Exchange gathered and reported nine separate data fields relating to PIM orders of fewer than 50 contracts, including (1) the number of orders of fewer than 50 contracts entered into the PIM; (2) the percentage of all orders of fewer than 50 contracts sent to the Exchange that are entered into the PIM; (3) the spread in the option, at the time an order of fewer than 50 contracts is submitted to the PIM; and (4) of PIM trades, the percentage done at the NBBO plus \$.01, plus \$.02, plus \$.03, etc. See Exhibit B to Topaz Exchange Application, Securities Exchange Act Release No. 69012 (March 1, 2013), 78 FR 14847 (March 7, 2013) (File No. 10-209).

The Exchange compiled price improvement data in orders from January through June 2016 that divides the data into the following groups: (1) orders of over 50 contracts where the Agency Order was on behalf of a Public Customer and ISE Gemini was at the NBBO; (2) orders of over 50 contracts where the Agency Order was on behalf of a Public Customer and ISE Gemini was not at the NBBO; (3) orders of over 50 contracts where the Agency Order was on behalf of a non-customer and ISE Gemini was at the NBBO; (4) orders of over 50 contracts where the Agency Order was on behalf of a non-customer and ISE Gemini was not at the NBBO; (5) orders of 50 contracts or less where the Agency Order was on behalf of a Public Customer and ISE Gemini was at the NBBO; (6) orders of 50 contracts or less where the Agency Order was on behalf of a Public Customer and ISE Gemini was not at the NBBO; (7) orders of 50 contracts or less where the Agency Order was on behalf of a non-customer and ISE Gemini was at the NBBO; and (8) orders of 50 contracts or less where the Agency Order was on behalf of a non-customer and ISE Gemini was not at the NBBO.

For January 2016, where the order was on behalf of a Public Customer, the order was for 50 contracts or less, and ISE Gemini was at the NBBO, the most contracts traded (4,192) occurred when the spread was between \$0.05 and \$0.10.<sup>13</sup> Of these, the greatest number of contracts (1,400) received \$0.03 price improvement. There was an average number of three participants when the spread was between \$0.05 and \$0.10. In comparison, 6 contracts that traded at this spread received no price improvement. When the spread was \$0.01 for this same category, a total of 499 contracts traded; 349 contracts

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<sup>13</sup> This discussion of January 2016 data is intended to be illustrative of data that was gathered between January 2016 and July 2016. The complete underlying data for January 2016 through June 2016 for these eight categories is attached as Exhibit 3.

received no price improvement, and 150 received \$0.01 price improvement. There was an average number of four participants when the spread was \$0.01.

In comparison, in January 2016, where the order was on behalf of a Public Customer, and the order was for greater than 50 contracts, and ISE Gemini was at the NBBO, the most contracts traded (1,495) occurred where the spread was \$0.02. Of those contracts, the greatest number of contracts (979) received \$0.01 price improvement, and 456 contracts received no price improvement. There was an average number of 4 participants where the spread was \$0.02.

In January 2016, where the order was on behalf of a Public Customer, the order was for 50 contracts or less, and ISE Gemini was not at the NBBO, the most contracts traded (1,403) occurred when the spread was between \$0.05 and \$0.10. Of this category, the greatest number of contracts (570) received \$0.01 price improvement. In comparison, when the spread was \$0.01 in this same category, a total of 80 contracts traded, and all received price improvement.

In comparison, in January 2016, where the order was on behalf of a Public Customer, and order was for greater than 50 contracts, and ISE Gemini was not at the NBBO, the most contracts traded (4,846) occurred where the spread was \$0.05 - \$0.10. Of those contracts, the greatest number of contracts (1,234) received \$0.01 price improvement, and 1,008 contracts received no price improvement. There was an average number of 4 participants where the spread was \$0.05 - \$0.10.

ISE Gemini believes that the data gathered during the Pilot period indicates that there is meaningful competition in PIM auctions for all size orders, there is an active and liquid market functioning on the Exchange outside of the auction mechanism, and that

there are opportunities for significant price improvement for orders executed through PIM. The Exchange therefore believes that it is appropriate to approve the no-minimum size requirement on a permanent basis.

#### Early Conclusion of the PIM Auction

Supplemental Material .05 to Rule 723 provides that Rule 723(c)(5) and Rule 723(d)(4), which relate to the termination of the exposure period by unrelated orders shall be part of the current Pilot. Rule 723(c)(5) provides that the exposure period will automatically terminate (i) at the end of the 500 millisecond period,<sup>14</sup> (ii) upon the receipt of a market or marketable limit order on the Exchange in the same series, or (iii) upon the receipt of a nonmarketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange. Rule 723(d)(4) provides that, when a market order or marketable limit order on the opposite side of the market from the Agency Order ends the exposure period, it will participate in the execution of the Agency Order at the price that is mid-way between the best counter-side interest and the NBBO, so that both the market or marketable limit order and the Agency Order receive price improvement.

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<sup>14</sup> As initially approved, this provision of Rule 723(c)(5) provided that the exposure period would automatically terminate at the end of a one second period. See Exhibit B to ISE Topaz Form 1 (10-209). This exposure period was subsequently reduced to the current 500 milliseconds, and the Exchange is further proposing to modify the exposure period to a time period of no less than 100 milliseconds and no more than one second. See Securities Exchange Act Release No. 79353 (November 18, 2016), 81 FR 85280 (November 25, 2016) (SR-ISEGemini-2016-14).



Transactions will be rounded, when necessary, to the \$.01 increment that favors the Agency Order.<sup>15</sup>

As with the no minimum size requirement, the Exchange has gathered data on these three conditions to assess the effect of early PIM Auction conclusions on the Pilot.<sup>16</sup>

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<sup>15</sup> When the Pilot was initially approved, Rule 723(d)(5) was approved on a pilot basis, which was subsequently re-numbered as current Rule 723(d)(4). See Securities Exchange Act Release No. 72553 (July 8, 2014), 79 FR 40813 (July 8, 2014) (SR-ISEGemini-2014-19).

<sup>16</sup> The Exchange agreed to gather and submit the following data on this part of the Pilot: (1) the number of times that a market or marketable limit order in the same series on the same side of the market as the Agency Order prematurely ended the PIM auction, and the number of times such orders were entered by the same (or affiliated) firm that initiated the PIM that was terminated; (2) the percentage of PIM early terminations due to the receipt of a market or marketable limit order in the same series on the same side of the market that occurred within a 1/2 second of the start of the PIM auction; the percentage that occurred within one second of the start of the PIM auction; the percentage that occurred within one and 1/2 second of the start of the PIM auction; the percentage that occurred within 2 seconds of the start of the PIM auction; the percentage that occurred within 2 and 1/2 seconds of the PIM auction; and the average amount of price improvement provided to the Agency Order where the PIM is terminated early at each of these time periods; (3) the number of times that a market or marketable limit order in the same series on the opposite side of the market as the Agency Order prematurely ended the PIM auction and at what time the unrelated order ended the PIM auction, and the number of times such orders were entered by the same (or affiliated) firm that initiated the PIM that was terminated; (4) the percentage of PIM early terminations due to the receipt of a market or marketable limit order in the same series on the opposite side of the market that occurred within a 1/2 second of the start of the PIM auction; the percentage that occurred within one second of the start of the PIM auction; the percentage that occurred within one and 1/2 second of the start of the PIM auction; the percentage that occurred within 2 seconds of the start of the PIM auction; the percentage that occurred within 2 and 1/2 seconds of the PIM auction; and the average amount of price improvement provided to the Agency Order where the PIM is terminated early at each of these time periods; (5) the number of times that a nonmarketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange prematurely ended the PIM auction and at what time the unrelated order ended the PIM auction, and the number of times such orders were

For the period from January 2016 through June 2016, there were a total of 65 early terminated auctions. The number of orders in early terminated PIM auctions constituted 0.08% of total PIM orders. There were a total of 325 contracts that traded through early terminated auctions. The number of contracts in early terminated PIM auctions represented 0.11% of total PIM contracts. Of the early terminated auctions, 50.77% of those auctions received price improvement, and 52% of contracts that traded in an early-terminated auction received price improvement. The total amount of price improvement for PIM auctions that terminated early was \$7.96.

Based on the data gathered during the pilot, the Exchange does not anticipate that any of these conditions will occur with significant frequency, or will otherwise significantly affect the functioning of the PIM. The Exchange also notes that, of the early terminated auctions, 50.77% of those auctions received price improvement, and 52% of contracts that traded in an early-terminated auction received price improvement. The total amount of price improvement per contract for PIM auctions that terminated early

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entered by the same (or affiliated) firm that initiated the PIM that was terminated; (6) the percentage of PIM early terminations due to the receipt of a market or marketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange that occurred within a 1/2 second of the start of the PIM auction; the percentage that occurred within one second of the start of the PIM auction; the percentage that occurred within one and 1/2 second of the start of the PIM auction; the percentage that occurred within 2 seconds of the start of the PIM auction; the percentage that occurred within 2 and 1/2 seconds of the PIM auction; and the average amount of price improvement provided to the Agency Order where the PIM is terminated early at each of these time periods; and (7) The average amount of price improvement provided to the Agency Order when the PIM auction is not terminated early (i.e., runs the full three seconds). See Exhibit B to Topaz Exchange Application, Securities Exchange Act Release No. 69012 (March 1, 2013), 78 FR 14847 (March 7, 2013) (File No. 10-209).

was \$7.96. The Exchange therefore believes it is appropriate to approve this aspect of the Pilot on a permanent basis.

b. Statutory Basis

The Exchange believes that the proposed rule change is consistent with the provisions of Section 6 of the Act,<sup>17</sup> in general and with Section 6(b)(5) of the Act,<sup>18</sup> in that it is designed to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, 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 is not designed to permit unfair discrimination between customers, issuers, brokers, or dealers, or to regulate by virtue of any authority conferred by the Act matters not related to the purposes of the Act or the administration of the Exchange.

The Exchange believes that the proposed rule change is also consistent with Section 6(b)(8) of the Act<sup>19</sup> in that it does not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.

Specifically, the Exchange believes that PIM, including the rules to which the Pilot applies, results in increased liquidity available at improved prices, with competitive final pricing out of the complete control of the Electronic Access Member that initiated the auction. The Exchange believes that PIM promotes and fosters competition and

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<sup>17</sup> 15 U.S.C. 78f.

<sup>18</sup> 15 U.S.C. 78f(b)(5).

<sup>19</sup> 15 U.S.C. 78f(b)(8).

affords the opportunity for price improvement to more options contracts. The Exchange believes that the changes to the PIM requiring price improvement of at least one minimum price improvement increment over the NBBO for Agency Orders of less than 50 option contracts where the difference in the NBBO is \$0.01 will provide further price improvement for those orders, and thereby encourage additional submission of those orders into PIM. The Exchange believes that the proposal, which subjects members to the Minor Rule Violation Plan for failing to provide the required price improvement, coupled with the Exchange's surveillance efforts, are designed to facilitate members' compliance with the proposed requirement.

The Exchange believes that approving the Pilot on a permanent basis is also consistent with the Act. With respect to the no minimum size requirement, the Exchange believes that the data gathered during the Pilot period indicates that there is meaningful competition in the PIM for all size orders, there is an active and liquid market functioning on the Exchange outside of the auction mechanism, and that there are opportunities for significant price improvement for orders executed through PIM, including for small customer orders.

With respect to the early termination of the PIM, the Exchange believes that it is appropriate to terminate an auction (i) at the end of the 500 millisecond period, (ii) upon the receipt of a market or marketable limit order on the Exchange in the same series, or (iii) upon the receipt of a nonmarketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange. The Exchange also believes that it is consistent with the Act to require that, when a market order or marketable limit order on

the opposite side of the market from the Agency Order ends the exposure period, it will participate in the execution of the Agency Order at the price that is mid-way between the best counter-side interest and the NBBO, so that both the market or marketable limit order and the Agency Order receive price improvement. Based on the data gathered during the pilot, the Exchange does not anticipate that any of these conditions will occur with significant frequency, or will otherwise disrupt the functioning of the PIM. The Exchange also notes that a significant percentage of PIM auctions that terminated early executed at a price that was better than the NBBO at the time the auction began, and that a significant percentage of contracts in auctions that terminated early received price improvement.

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

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. The proposal will apply to all Exchange members, and participation in the PIM process is completely voluntary. Based on the data collected by the Exchange during the Pilot, the Exchange believes that there is meaningful competition in the PIM for all size orders, there are opportunities for significant price improvement for orders executed through PIM, and that there is an active and liquid market functioning on the Exchange outside of the PIM. The Exchange believes that requiring increased price improvement for Agency Orders may encourage competition by attracting additional orders to participate in the PIM. The Exchange believes that approving the Pilot on a permanent basis will not significantly impact competition, as the Exchange is proposing no other change to the Pilot beyond implementing it on a permanent basis.

5. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

No written comments were either solicited or received.

6. Extension of Time Period for Commission Action

Not applicable.

7. Basis for Summary Effectiveness Pursuant to Section 19(b)(3) or for Accelerated Effectiveness Pursuant to Section 19(b)(2)

The Exchange requests accelerated effectiveness pursuant to Section 19(b)(2) of the Act.<sup>20</sup> The Exchange is requesting, and believes that good cause exists for granting, accelerated approval so that this proposal will be approved and effective as of the current expiration date of the Pilot, which is January 18, 2017. This will avoid any potential investor confusion or market disruption that could otherwise result from a temporary interruption in the PIM.

8. Proposed Rule Change Based on Rules of Another Self-Regulatory Organization or of the Commission

Not applicable.

9. Security-Based Swap Submissions Filed Pursuant to Section 3C of the Act

Not applicable.

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

Not applicable.

11. Exhibits

1. Notice of Proposed Rule Change for publication in the Federal Register.
3. Summary of pilot data.
5. Text of the proposed rule change.

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<sup>20</sup> 15 U.S.C. 78s(b)(2).

**EXHIBIT 1**

SECURITIES AND EXCHANGE COMMISSION  
(Release No. \_\_\_\_\_ ; File No. SR-ISEGemini-2016-23)

December \_\_, 2016

Self-Regulatory Organizations; ISE Gemini LLC; Notice of Filing of Proposed Rule Change to Amend ISE Gemini Rule 723 and to Make Pilot Program Permanent

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)<sup>1</sup>, and Rule 19b-4 thereunder,<sup>2</sup> notice is hereby given that on December 12, 2016, ISE Gemini, LLC (the “Exchange” or “ISE Gemini”) filed with the Securities and Exchange Commission (“SEC” or “Commission”) the proposed rule change as described in Items I, II, and III, below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend ISE Gemini Rule 723, concerning its Price Improvement Mechanism (“PIM”). Certain aspects of PIM are currently operating on a pilot basis (“Pilot”), which is set to expire on January 18, 2017.<sup>3</sup> The Pilot concerns (i) the termination of the exposure period by unrelated orders; and (ii) no minimum size requirement of orders eligible for PIM. ISE Gemini seeks to make the Pilot permanent,

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<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

<sup>3</sup> See Securities Exchange Act Release No. 78343 (July 15, 2016), 81 FR 47483 (July 21, 2016) (SR-ISEGemini-2016-07).

and also proposes to change the requirements for providing price improvement for Agency Orders of less than 50 option contracts.

The text of the proposed rule change is available on the Exchange's Website at <http://nasdaq.cchwallstreet.com>, at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

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

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of this proposed rule change is to make permanent certain pilots within Rule 723, relating to PIM. Paragraph .03 of the Supplementary Material to Rule 723 provides that there is no minimum size requirement for orders to be eligible for PIM. Paragraph .05 concerns the termination of the exposure period by unrelated orders. In addition, ISE Gemini proposes to modify the requirements for PIM auctions involving less than 50 contracts where the National Best Bid and Offer ("NBBO") is only \$0.01 wide.



### Background

The Exchange adopted PIM as part of its application to be registered as a national securities exchange under its previous name of Topaz Exchange, LLC (“Topaz”).<sup>4</sup> In approving PIM, the Commission noted that it was largely based on a similar functionality offered by the International Securities Exchange, LLC (“ISE”).<sup>5</sup> The PIM is a process that allows Electronic Access Members (“EAM”) to provide price improvement opportunities for a transaction wherein the Member seeks to execute an agency order as principal or execute an agency order against a solicited order (a “Crossing Transaction”). A Crossing Transaction is comprised of the order the EAM represents as agent (the “Agency Order”) and a counter-side order for the full size of the Agency Order (the “Counter-Side Order”). The Counter-Side Order may represent interest for the Member’s own account, or interest the Member has solicited from one or more other parties, or a combination of both.

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<sup>4</sup> See Securities Exchange Act Release No. 70050 (July 26, 2013), 78 FR 46622 (August 1, 2013) (File No. 10-209) (“Exchange Approval Order”). The Exchange subsequently changed its name to ISE Gemini. See Securities Exchange Act Release No. 71586 (February 20, 2014), 79 FR 10861 (February 26, 2014) (SR-Topaz-2014-06).

In addition to the Exchange Approval Order and the filings cited above, the following proposed rule changes have been submitted in connection with PIM. See Securities Exchange Act Release Nos. 79253 (November 7, 2016), 81 FR 79540 (ISEGemini-2016-13); 78343 (July 15, 2016), 81 FR 47483 (July 21, 2016) (SR-ISE Gemini-2016-07); 75481 (July 17, 2015), 80 FR 43826 (July 23, 2015) (SR-ISE Gemini-2015-13); 73317 (October 8, 2014), 79 FR 61911 (October 15, 2014) (SR-ISEGemini-2014-26); 72553 (July 8, 2014), 79 FR 40813 (July 8, 2014) (SR-ISE Gemini-2014-19); 72466 (June 25, 2014), 79 FR 37378 (July 1, 2014) (SR-ISE Gemini-2014-17); 70636 (October 9, 2013), 78 FR 62838 (October 22, 2013) (SR-Topaz-2013-05).

<sup>5</sup> See Exchange Approval Order, supra note 4.

Rule 723 sets forth the criteria pursuant to which the PIM is initiated. Specifically, a Crossing Transaction must be entered only at a price that is equal to or better than the national best bid or offer (“NBBO”) and better than the limit order or quote on the Exchange order book on the same side of the Agency Order. The Crossing Transaction may be priced in one-cent increments. The Crossing Transaction may not be canceled, but the price of the Counter-Side Order may be improved during the exposure period.

Rule 723 also sets forth requirements relating to the exposure of orders in PIM and the termination of the exposure period. Upon entry of a Crossing Transaction into the Price Improvement Mechanism, a broadcast message that includes the series, price and size of the Agency Order, and whether it is to buy or sell, will be sent to all Members. This broadcast message will not be included in the ISE disseminated best bid or offer and will not be disseminated through OPRA. Members will be given 500 milliseconds to indicate the size and price at which they want to participate in the execution of the Agency Order (“Improvement Orders”). Improvement Orders may be entered by all Members for their own account or for the account of a Public Customer in one-cent increments at the same price as the Crossing Transaction or at an improved price for the Agency Order, and for any size up to the size of the Agency Order. During the exposure period, Improvement Orders may not be canceled, but may be modified to (1) increase the size at the same price, or (2) improve the price of the Improvement Order for any size up to the size of the Agency Order. During the exposure period, responses (including the Counter Side Order, Improvement Orders, and any changes to either) submitted by Members shall not be visible to other auction participants. The exposure

period will automatically terminate (i) at the end of the 500 millisecond period, (ii) upon the receipt of a market or marketable limit order on the Exchange in the same series, or (iii) upon the receipt of a nonmarketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange.

Rule 723 also describes how orders will be executed at the end of the exposure period. Specifically, at the end of the exposure period, the Agency Order will be executed in full at the best prices available, taking into consideration orders and quotes in the Exchange market, Improvement Orders, and the Counter-Side Order. The Agency Order will receive executions at multiple price levels if there is insufficient size to execute the entire order at the best price. At a given price, Priority Customer interest is executed in full before Professional Orders and any other interest of Members (i.e., proprietary interest from Electronic Access Members and Exchange market makers).

After Priority Customer interest at a given price, Professional Orders and Members' interest will participate in the execution of the Agency Order based upon the percentage of the total number of contracts available at the price that is represented by the size of the Members' interest.

In the case where the Counter-Side Order is at the same price as Members' interest (after Priority Customer interest at a given price), the Counter-Side order will be allocated the greater of one (1) contract or forty percent (40%) of the initial size of the Agency Order before other Member interest is executed. Upon entry of Counter-Side orders, Members can elect to automatically match the price and size of orders, quotes and responses received during the exposure period up to a specified limit price or without

specifying a limit price. In this case, the Counter-Side order will be allocated its full size at each price point, or at each price point within its limit price if a limit is specified, until a price point is reached where the balance of the order can be fully executed. At such price point, the Counter-Side order shall be allocated the greater of one contract or forty percent (40%) of the original size of the Agency Order, but only after Priority Customer Orders at such price point are executed in full. Thereafter, all other orders, Responses, and quotes at the price point will participate in the execution of the Agency Order based upon the percentage of the total number of contracts available at the price that is represented by the size of the order, Response or quote. An election to automatically match better prices cannot be cancelled or altered during the exposure period.

When a market order or marketable limit order on the opposite side of the market from the Agency Order ends the exposure period, it will participate in the execution of the Agency Order at the price that is mid-way between the best counter-side interest and the NBBO, so that both the market or marketable limit order and the Agency Order receive price improvement. Transactions will be rounded, when necessary, to the \$.01 increment that favors the Agency Order.

#### The Pilot

As described above, two components of PIM are currently operating on a pilot basis: (i) the termination of the exposure period by unrelated orders; and (ii) no minimum size requirement of orders entered into PIM. The pilot has been extended until January 18, 2017.<sup>6</sup>

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<sup>6</sup> See note 3 above.

As described in greater detail below, during the pilot period the Exchange has been required to submit, and has been submitting, certain data periodically as required by the Commission, to provide supporting evidence that, among other things, there is meaningful competition for all size orders within the PIM, that there is significant price improvement for all orders executed through the PIM, and that there is an active and liquid market functioning on the Exchange both within PIM and outside of the Auction mechanism. The Exchange has also analyzed the impact of certain aspects of the Pilot; for example, situation in which PIM is terminated prematurely by an unrelated order.

The Exchange now seeks to have the Pilot approved on a permanent basis. In addition, the Exchange proposes to modify the scope of PIM so that, with respect to PIM orders for less than 50 option contracts, members will be required to receive price improvement of at least one minimum price improvement increment over the NBBO if the NBBO is only \$0.01 wide. For orders of 50 contracts or more, or if the difference in the NBBO is greater than \$0.01, the requirements for price improvement remain the same.

#### Price Improvement for Orders Under 50 Contracts

Currently, the PIM may be initiated if all of the following conditions are met. A Crossing Transaction must be entered only at a price that is equal to or better than the NBBO and better than the limit order or quote on the Exchange order book on the same side of the Agency Order. The Crossing Transaction may be priced in one-cent increments. The Crossing Transaction may not be canceled, but the price of the Counter-Side Order may be improved during the exposure period.

ISE Gemini proposes to amend Rule 723(b) to require Electronic Access Members to provide at least \$0.01 price improvement for an Agency Order if that order is for less than 50 contracts and if the difference between the NBBO is \$0.01. For the period beginning January 19, 2017 until a date specified by the Exchange in a Regulatory Information Circular, which date shall be no later than April 15, 2017, ISE Gemini will adopt a member conduct standard to implement this requirement.<sup>7</sup> Under this provision, ISE Gemini is proposing to amend the Auction Eligibility Requirements to require that, if the Agency Order is for less than 50 option contracts, and if the difference between the NBBO is \$0.01, an Electronic Access Member shall not enter a Crossing Transaction unless such Crossing Transaction is entered at a price that is one minimum price improvement increment better than the NBBO on the opposite side of the market from the Agency Order, and better than any limit order on the limit order book on the same side of the market as the Agency Order. This requirement will apply regardless of whether the Agency Order is for the account of a public customer, or where the Agency Order is for the account of a broker dealer or any other person or entity that is not a Public Customer. Failure to provide such price improvement will subject Members to the fines set forth in Rule 1614(d)(4) of the International Securities Exchange, LLC (“ISE”).<sup>8</sup>

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<sup>7</sup> The Exchange notes that its indirect parent company, U.S. Exchange Holdings, Inc. has been acquired by Nasdaq, Inc. See Securities Exchange Act Release No. 78119 (June 21, 2016), 81 FR 41611 (June 27, 2016) (SR-ISEGemini-2016-05). Pursuant to this acquisition, ISE Gemini platforms are migrating to Nasdaq platforms, including the platform that operates PIM. ISE Gemini intends to retain the proposed member conduct standard requiring price improvement for options orders of under 50 contracts where the difference between the NBBO is \$0.01 until the ISE Gemini platforms and the corresponding symbols are migrated to the platforms operated by Nasdaq, Inc.

<sup>8</sup> In a separate proposed rule change, ISE is proposing to adopt similar price improvement requirements for orders of less than 50 contracts for its PIM. As

The Exchange will conduct electronic surveillance of PIM to ensure that members comply with the proposed price improvement requirements for option orders of less than 50 contracts. Specifically, using an electronic surveillance system that produces alerts of potentially unlawful PIM orders, the Exchange will perform a frequent review of member firm activity to identify instances of apparent violations. Upon discovery of an apparent violation, the Exchange will attempt to contact the appropriate member firm to communicate the specifics of the apparent violation with the intent to assist the member firm in preventing submission of subsequent problematic orders. The Exchange will review the alerts monthly and determine the applicability of the MRVP and appropriate penalty. The Exchange is not limited to the application of the MRVP, and may at its discretion, choose to escalate a matter for processing through the Exchange's disciplinary program.

The Exchange is also proposing a systems-based mechanism to implement this price improvement requirement, which shall be effective following the migration of a symbol to INET, the platform operated by Nasdaq, Inc. that will also operate the PIM. Under this provision, if the Agency Order is for less than 50 option contracts, and if the difference between the National Best Bid and National Best Offer ("NBBO") is \$0.01,

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part of that rule change, ISE is proposing to amend ISE Rule 1614 (Imposition of Fines for Minor Rule Violations) to add Rule 1614(d)(4), which will provide that, beginning January 19, 2017, any Member who enters an order into PIM for less than 50 contracts, while the National Best Bid or Offer spread is \$0.01, must provide price improvement of at least one minimum price improvement increment better than the NBBO on the opposite side of the market from the Agency Order, which increment may not be smaller than \$0.01. Failure to provide such price improvement will result in members being subject to the following fines: \$500 for the second offense, \$1,000 for the third offense, and \$2,500 for the fourth offense. Subsequent offenses will subject the member to formal disciplinary action. ISE will review violations on a monthly cycle to assess these violations.

the Crossing Transaction must be entered at one minimum price improvement increment better than the NBBO on the opposite side of the market from the Agency Order and better than the limit order or quote on the ISE order book on the same side of the Agency Order.

The Exchange believes that these changes to PIM may provide additional opportunities for Agency Orders of under 50 option contracts to receive price improvement over the NBBO where the difference in the NBBO is \$0.01 and therefore encourage the increased submission of orders of under 50 option contracts. The Exchange notes that the statistics for the current pilot, which include, among other things, price improvement for orders of less than 50 option contracts under the current auction eligibility requirements, show relatively small amounts of price improvement for such orders. ISE Gemini believes that the proposed requirements will therefore increase the price improvement that orders of under 50 option contracts may receive in PIM.

The Exchange will retain the current requirements for auction eligibility where the Agency Order is for 50 option contracts or more, or if the difference between the NBBO is greater than \$0.01. Accordingly, the Exchange is amending the Auction Eligibility Requirements to state that, if the PIM Order is for 50 option contracts or more or if the difference between the NBBO is greater than \$0.01, the Crossing Transaction must be entered only at a price that is equal to or better than the NBBO and better than the limit order or quote on the Exchange order book on the same side as the Agency Order.



No Minimum Size Requirement

Supplemental Material .03 to Rule 723 provides that, as part of the current Pilot, there will be no minimum size requirement for orders to be eligible for the Auction.<sup>9</sup> As with the ISE PIM, the Exchange proposed the no-minimum size requirement for the PIM because it believed that this would provide small customer orders with the opportunity to participate in the PIM and to receive corresponding price improvement. In initially approving the ISE PIM, the Commission noted that the no minimum size requirement provided an opportunity for more market participants to participate in the auction.<sup>10</sup> The Commission also stated that it would evaluate PIM during the Pilot Period to determine whether it would be beneficial to customers and to the options market as a whole to approve any proposal requesting permanent approval to permit orders of fewer than 50 contracts to be submitted to the PIM.<sup>11</sup>

As noted above, throughout the Pilot, the Exchange has been required to submit certain data periodically to provide supporting evidence that, among other things, there is meaningful competition for all size orders within the PIM, that there is significant price improvement for all orders executed through the PIM, and that there is an active and

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<sup>9</sup> The provision relating to the no minimum size requirement also requires the Exchange to submit certain data, periodically as required by the Commission, to provide supporting evidence that, among other things, there is meaningful competition for all size orders within the PIM, that there is significant price improvement for all orders executed through the PIM, and that there is an active and liquid market functioning on the Exchange outside of the PIM. Any raw data which is submitted to the Commission will be provided on a confidential basis.

<sup>10</sup> See Securities Exchange Act Release No. 50819 (December 8, 2004), 69 FR 75093 (December 15, 2004) (SR-ISE-2003-06) (“ISE PIM Approval Order”).

<sup>11</sup> Id.

liquid market functioning on the Exchange both within PIM and outside of the Auction mechanism.

The Exchange believes that the data gathered since the approval of the Pilot establishes that there is liquidity and competition both within PIM and outside of PIM, and that there are opportunities for significant price improvement within PIM.<sup>12</sup>

In the period between January and June 2016, the PIM executed a total of 297,239 contracts, which represented 0.62% of total ISE Gemini contract volume and 0.01% of industry volume. The percent of ISE Gemini volume traded in PIM ranged from 0.47% in May 2016 to 0.69% in February 2016.

The Exchange compiled price improvement data in orders from January through June 2016 that divides the data into the following groups: (1) orders of over 50 contracts where the Agency Order was on behalf of a Public Customer and ISE Gemini was at the NBBO; (2) orders of over 50 contracts where the Agency Order was on behalf of a Public Customer and ISE Gemini was not at the NBBO; (3) orders of over 50 contracts where the Agency Order was on behalf of a non-customer and ISE Gemini was at the NBBO; (4) orders of over 50 contracts where the Agency Order was on behalf of a non-customer and ISE Gemini was not at the NBBO; (5) orders of 50 contracts or less where the Agency Order was on behalf of a Public Customer and ISE Gemini was at the NBBO; (6)

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<sup>12</sup> Specifically, the Exchange gathered and reported nine separate data fields relating to PIM orders of fewer than 50 contracts, including (1) the number of orders of fewer than 50 contracts entered into the PIM; (2) the percentage of all orders of fewer than 50 contracts sent to the Exchange that are entered into the PIM; (3) the spread in the option, at the time an order of fewer than 50 contracts is submitted to the PIM; and (4) of PIM trades, the percentage done at the NBBO plus \$.01, plus \$.02, plus \$.03, etc. See Exhibit B to Topaz Exchange Application, Securities Exchange Act Release No. 69012 (March 1, 2013), 78 FR 14847 (March 7, 2013) (File No. 10-209).

orders of 50 contracts or less where the Agency Order was on behalf of a Public Customer and ISE Gemini was not at the NBBO; (7) orders of 50 contracts or less where the Agency Order was on behalf of a non-customer and ISE Gemini was at the NBBO; and (8) orders of 50 contracts or less where the Agency Order was on behalf of a non-customer and ISE Gemini was not at the NBBO.

For January 2016, where the order was on behalf of a Public Customer, the order was for 50 contracts or less, and ISE Gemini was at the NBBO, the most contracts traded (4,192) occurred when the spread was between \$0.05 and \$0.10.<sup>13</sup> Of these, the greatest number of contracts (1,400) received \$0.03 price improvement. There was an average number of three participants when the spread was between \$0.05 and \$0.10. In comparison, 6 contracts that traded at this spread received no price improvement. When the spread was \$0.01 for this same category, a total of 499 contracts traded; 349 contracts received no price improvement, and 150 received \$0.01 price improvement. There was an average number of four participants when the spread was \$0.01.

In comparison, in January 2016, where the order was on behalf of a Public Customer, and the order was for greater than 50 contracts, and ISE Gemini was at the NBBO, the most contracts traded (1,495) occurred where the spread was \$0.02. Of those contracts, the greatest number of contracts (979) received \$0.01 price improvement, and 456 contracts received no price improvement. There was an average number of 4 participants where the spread was \$0.02.

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<sup>13</sup> This discussion of January 2016 data is intended to be illustrative of data that was gathered between January 2016 and July 2016. The complete underlying data for January 2016 through June 2016 for these eight categories is attached as Exhibit 3.

In January 2016, where the order was on behalf of a Public Customer, the order was for 50 contracts or less, and ISE Gemini was not at the NBBO, the most contracts traded (1,403) occurred when the spread was between \$0.05 and \$0.10. Of this category, the greatest number of contracts (570) received \$0.01 price improvement. In comparison, when the spread was \$0.01 in this same category, a total of 80 contracts traded, and all received price improvement.

In comparison, in January 2016, where the order was on behalf of a Public Customer, and order was for greater than 50 contracts, and ISE Gemini was not at the NBBO, the most contracts traded (4,846) occurred where the spread was \$0.05 - \$0.10. Of those contracts, the greatest number of contracts (1,234) received \$0.01 price improvement, and 1,008 contracts received no price improvement. There was an average number of 4 participants where the spread was \$0.05 - \$0.10.

ISE Gemini believes that the data gathered during the Pilot period indicates that there is meaningful competition in PIM auctions for all size orders, there is an active and liquid market functioning on the Exchange outside of the auction mechanism, and that there are opportunities for significant price improvement for orders executed through PIM. The Exchange therefore believes that it is appropriate to approve the no-minimum size requirement on a permanent basis.

#### Early Conclusion of the PIM Auction

Supplemental Material .05 to Rule 723 provides that Rule 723(c)(5) and Rule 723(d)(4), which relate to the termination of the exposure period by unrelated orders shall be part of the current Pilot. Rule 723(c)(5) provides that the exposure period will

automatically terminate (i) at the end of the 500 millisecond period,<sup>14</sup> (ii) upon the receipt of a market or marketable limit order on the Exchange in the same series, or (iii) upon the receipt of a nonmarketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange. Rule 723(d)(4) provides that, when a market order or marketable limit order on the opposite side of the market from the Agency Order ends the exposure period, it will participate in the execution of the Agency Order at the price that is mid-way between the best counter-side interest and the NBBO, so that both the market or marketable limit order and the Agency Order receive price improvement. Transactions will be rounded, when necessary, to the \$.01 increment that favors the Agency Order.<sup>15</sup>

As with the no minimum size requirement, the Exchange has gathered data on these three conditions to assess the effect of early PIM Auction conclusions on the Pilot.<sup>16</sup>

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<sup>14</sup> As initially approved, this provision of Rule 723(c)(5) provided that the exposure period would automatically terminate at the end of a one second period. See Exhibit B to ISE Topaz Form 1 (10-209). This exposure period was subsequently reduced to the current 500 milliseconds, and the Exchange is further proposing to modify the exposure period to a time period of no less than 100 milliseconds and no more than one second. See Securities Exchange Act Release No. 79353 (November 18, 2016), 81 FR 85280 (November 25, 2016) (SR-ISEGemini-2016-14).

<sup>15</sup> When the Pilot was initially approved, Rule 723(d)(5) was approved on a pilot basis, which was subsequently re-numbered as current Rule 723(d)(4). See Securities Exchange Act Release No. 72553 (July 8, 2014), 79 FR 40813 (July 8, 2014) (SR-ISEGemini-2014-19).

<sup>16</sup> The Exchange agreed to gather and submit the following data on this part of the Pilot: (1) the number of times that a market or marketable limit order in the same series on the same side of the market as the Agency Order prematurely ended the PIM auction, and the number of times such orders were entered by the same (or

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affiliated) firm that initiated the PIM that was terminated; (2) the percentage of PIM early terminations due to the receipt of a market or marketable limit order in the same series on the same side of the market that occurred within a 1/2 second of the start of the PIM auction; the percentage that occurred within one second of the start of the PIM auction; the percentage that occurred within one and 1/2 second of the start of the PIM auction; the percentage that occurred within 2 seconds of the start of the PIM auction; the percentage that occurred within 2 and 1/2 seconds of the PIM auction; and the average amount of price improvement provided to the Agency Order where the PIM is terminated early at each of these time periods; (3) the number of times that a market or marketable limit order in the same series on the opposite side of the market as the Agency Order prematurely ended the PIM auction and at what time the unrelated order ended the PIM auction, and the number of times such orders were entered by the same (or affiliated) firm that initiated the PIM that was terminated; (4) the percentage of PIM early terminations due to the receipt of a market or marketable limit order in the same series on the opposite side of the market that occurred within a 1/2 second of the start of the PIM auction; the percentage that occurred within one second of the start of the PIM auction; the percentage that occurred within one and 1/2 second of the start of the PIM auction; the percentage that occurred within 2 seconds of the start of the PIM auction; the percentage that occurred within 2 and 1/2 seconds of the PIM auction; and the average amount of price improvement provided to the Agency Order where the PIM is terminated early at each of these time periods; (5) the number of times that a nonmarketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange prematurely ended the PIM auction and at what time the unrelated order ended the PIM auction, and the number of times such orders were entered by the same (or affiliated) firm that initiated the PIM that was terminated; (6) the percentage of PIM early terminations due to the receipt of a market or marketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange that occurred within a 1/2 second of the start of the PIM auction; the percentage that occurred within one second of the start of the PIM auction; the percentage that occurred within one and 1/2 second of the start of the PIM auction; the percentage that occurred within 2 seconds of the start of the PIM auction; the percentage that occurred within 2 and 1/2 seconds of the PIM auction; and the average amount of price improvement provided to the Agency Order where the PIM is terminated early at each of these time periods; and (7) The average amount of price improvement provided to the Agency Order when the PIM auction is not terminated early (i.e., runs the full three seconds). See Exhibit B to Topaz Exchange Application, Securities Exchange Act Release No. 69012 (March 1, 2013), 78 FR 14847 (March 7, 2013) (File No. 10-209).

For the period from January 2016 through June 2016, there were a total of 65 early terminated auctions. The number of orders in early terminated PIM auctions constituted 0.08% of total PIM orders. There were a total of 325 contracts that traded through early terminated auctions. The number of contracts in early terminated PIM auctions represented 0.11% of total PIM contracts. Of the early terminated auctions, 50.77% of those auctions received price improvement, and 52% of contracts that traded in an early-terminated auction received price improvement. The total amount of price improvement for PIM auctions that terminated early was \$7.96.

Based on the data gathered during the pilot, the Exchange does not anticipate that any of these conditions will occur with significant frequency, or will otherwise significantly affect the functioning of the PIM. The Exchange also notes that, of the early terminated auctions, 50.77% of those auctions received price improvement, and 52% of contracts that traded in an early-terminated auction received price improvement. The total amount of price improvement per contract for PIM auctions that terminated early was \$7.96. The Exchange therefore believes it is appropriate to approve this aspect of the Pilot on a permanent basis.

## 2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with the provisions of Section 6 of the Act,<sup>17</sup> in general and with Section 6(b)(5) of the Act,<sup>18</sup> in that it is designed to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing

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<sup>17</sup> 15 U.S.C. 78f.

<sup>18</sup> 15 U.S.C. 78f(b)(5).

information with respect to, and facilitating transactions in securities, 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 is not designed to permit unfair discrimination between customers, issuers, brokers, or dealers, or to regulate by virtue of any authority conferred by the Act matters not related to the purposes of the Act or the administration of the Exchange.

The Exchange believes that the proposed rule change is also consistent with Section 6(b)(8) of the Act<sup>19</sup> in that it does not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.

Specifically, the Exchange believes that PIM, including the rules to which the Pilot applies, results in increased liquidity available at improved prices, with competitive final pricing out of the complete control of the Electronic Access Member that initiated the auction. The Exchange believes that PIM promotes and fosters competition and affords the opportunity for price improvement to more options contracts. The Exchange believes that the changes to the PIM requiring price improvement of at least one minimum price improvement increment over the NBBO for Agency Orders of less than 50 option contracts where the difference in the NBBO is \$0.01 will provide further price improvement for those orders, and thereby encourage additional submission of those orders into PIM. The Exchange believes that the proposal, which subjects members to the Minor Rule Violation Plan for failing to provide the required price improvement, coupled with the Exchange's surveillance efforts, are designed to facilitate members' compliance with the proposed requirement.

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<sup>19</sup> 15 U.S.C. 78f(b)(8).



The Exchange believes that approving the Pilot on a permanent basis is also consistent with the Act. With respect to the no minimum size requirement, the Exchange believes that the data gathered during the Pilot period indicates that there is meaningful competition in the PIM for all size orders, there is an active and liquid market functioning on the Exchange outside of the auction mechanism, and that there are opportunities for significant price improvement for orders executed through PIM, including for small customer orders.

With respect to the early termination of the PIM, the Exchange believes that it is appropriate to terminate an auction (i) at the end of the 500 millisecond period, (ii) upon the receipt of a market or marketable limit order on the Exchange in the same series, or (iii) upon the receipt of a nonmarketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange. The Exchange also believes that it is consistent with the Act to require that, when a market order or marketable limit order on the opposite side of the market from the Agency Order ends the exposure period, it will participate in the execution of the Agency Order at the price that is mid-way between the best counter-side interest and the NBBO, so that both the market or marketable limit order and the Agency Order receive price improvement. Based on the data gathered during the pilot, the Exchange does not anticipate that any of these conditions will occur with significant frequency, or will otherwise disrupt the functioning of the PIM. The Exchange also notes that a significant percentage of PIM auctions that terminated early executed at a price that was better than the NBBO at the time the auction began, and that

a significant percentage of contracts in auctions that terminated early received price improvement.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. The proposal will apply to all Exchange members, and participation in the PIM process is completely voluntary. Based on the data collected by the Exchange during the Pilot, the Exchange believes that there is meaningful competition in the PIM for all size orders, there are opportunities for significant price improvement for orders executed through PIM, and that there is an active and liquid market functioning on the Exchange outside of the PIM. The Exchange believes that requiring increased price improvement for Agency Orders may encourage competition by attracting additional orders to participate in the PIM. The Exchange believes that approving the Pilot on a permanent basis will not significantly impact competition, as the Exchange is proposing no other change to the Pilot beyond implementing it on a permanent basis.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Within 45 days of the date of publication of this notice in the Federal Register or within such longer period (i) as the Commission may designate up to 90 days of such date if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the Exchange consents, the Commission shall: (a) by order approve or

disapprove such proposed rule change, or (b) institute proceedings to determine whether the proposed rule change should be disapproved.

#### IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

##### Electronic comments:

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an e-mail to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include File Number SR-ISE Gemini-2016-23 on the subject line.

##### Paper comments:

- Send paper comments in triplicate to Brent J. Fields, Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Number SR-ISEGemini-2016-23. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/sro.shtml>).

Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the

Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly.

All submissions should refer to File Number SR-ISEGemini-2016-23 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>20</sup>

Robert W. Errett  
Deputy Secretary

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<sup>20</sup> 17 CFR 200.30-3(a)(12).

**Total PIM Volume Data (Jan 2016 – June 2016)**

Total	Jan. 2016	Feb. 2016	Mar. 2016	Apr. 2016	May. 2016	Jun. 2016	Totals/%
PIM	45,374	57,713	42,173	39,941	35,871	76,167	297,239
GEM	9,369,031	8,402,053	8,280,557	8,362,872	7,588,001	6,173,650	48,176,164
Industry	364,671,833	331,918,260	347,068,227	331,842,870	311,177,955	367,558,193	2,054,237,338
% PIM-to-GEM	0.48%	0.69%	0.51%	0.48%	0.47%	1.23%	0.62%
% PIM-to-Ind.	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%

ADV	Jan. 2016	Feb. 2016	Mar. 2016	Apr. 2016	May. 2016	Jun. 2016	Totals
PIM	2,388	2,886	2,008	1,902	1,708	3,462	2,397
GEM	493,107	420,103	394,312	398,232	361,333	280,620	388,517
Industry	19,193,254	16,595,913	16,527,058	15,802,041	14,817,998	16,707,191	16,566,430
Trading Days	19	20	21	21	21	22	124

**PIM Price Improvement Data (Jan 2016 – June 2016)**

Appendix: Detailed price improvement statistics for the volume transacted through PIM for January 2016.

Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	250	62	4	0	0	0	0	0	0	0	0	0	0	316	4	31.91%	20.86%
0.02	456	979	60	0	0	0	0	0	0	0	0	0	0	1495	4	40.53%	18.84%
0.03	339	804	133	0	0	0	0	0	0	0	0	0	0	1276	4	37.66%	17.32%
0.04	135	283	268	40	0	0	0	0	0	0	0	0	0	726	4	35.36%	21.50%
0.05	110	289	282	168	148	23	5	4	2	0	0	0	0	1031	4	24.60%	22.23%
>.05<=.10	69	268	251	291	229	156	137	28	0	0	0	0	0	1429	5	37.87%	23.48%
>.10<=.20	15	57	47	51	81	158	670	187	0	0	0	0	0	1266	5	45.21%	31.26%
>.20<=.30	0	5	10	3	3	20	142	345	11	0	0	0	0	539	5	50.03%	32.27%
>.30<=.40	2	0	40	10	4	5	14	197	117	0	0	0	0	389	4	47.89%	51.51%
>.40<=.50	0	0	0	0	0	0	31	62	330	39	0	1	0	463	5	35.72%	16.16%
>.50	0	0	0	0	11	38	38	73	180	119	80	176	0	715	5	40.34%	35.62%

Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	1467	137	5	1	0	0	0	0	0	0	0	0	0	1610	3	51.49%	42.47%
0.02	2087	787	9	1	1	0	2	1	0	0	0	0	0	2888	3	30.43%	20.08%
0.03	1531	1592	168	36	0	0	0	0	0	0	0	0	0	3327	4	20.91%	15.07%
0.04	737	1118	388	13	0	0	1	0	0	0	0	0	0	2257	4	16.24%	6.66%
0.05	893	882	698	115	49	14	31	23	0	0	0	0	0	2705	4	21.58%	18.87%
>.05<=.10	1008	1234	1208	828	189	193	157	13	2	14	0	0	0	4846	4	16.18%	13.77%
>.10<=.20	280	236	312	297	213	327	386	112	0	13	19	0	0	2195	4	22.98%	20.24%
>.20<=.30	73	59	34	50	50	107	152	237	24	0	0	0	0	786	4	27.84%	25.18%
>.30<=.40	38	0	78	11	15	3	70	72	37	0	0	0	0	324	4	33.35%	29.43%
>.40<=.50	0	0	7	0	4	0	26	64	21	3	1	0	0	126	4	35.96%	36.81%
>.50	36	0	0	0	8	0	26	169	140	113	38	153	0	683	4	37.27%	41.82%

Non-Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	349	150	0	0	0	0	0	0	0	0	0	0	499	4	33.50%	29.83%
0.02	891	285	0	0	0	0	0	0	0	0	0	0	1176	3	45.35%	52.68%
0.03	539	630	1158	0	0	0	0	0	0	0	0	0	2327	2	67.29%	75.59%
0.04	160	489	500	60	0	0	0	0	0	0	0	0	1209	3	49.35%	71.01%
0.05	60	290	80	40	0	0	0	0	0	0	0	0	470	4	32.00%	32.00%
>.05<=.10	6	660	790	1400	915	44	377	0	0	0	0	0	4192	3	53.76%	67.30%
>.10<=.20	210	120	385	143	432	454	896	120	0	0	0	0	2760	3	51.26%	54.51%
>.20<=.30	0	0	0	0	0	56	95	120	0	0	0	0	271	3	56.58%	56.83%
>.30<=.40	200	0	0	0	0	0	85	159	190	0	0	0	634	3	69.38%	72.08%
>.40<=.50	0	0	0	0	0	0	0	90	60	0	0	0	150	7	40.00%	40.00%
>.50	25	0	0	0	100	0	20	54	30	0	20	45	294	4	31.97%	28.91%

Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	80	0	0	0	0	0	0	0	0	0	0	0	80	4	40.00%	40.00%
0.02	847	285	0	0	0	0	0	0	0	0	0	0	1132	3	45.98%	53.27%
0.03	539	430	0	0	0	0	0	0	0	0	0	0	969	3	60.03%	54.81%
0.04	160	439	500	60	0	0	0	0	0	0	0	0	1159	3	54.83%	73.77%
0.05	60	260	40	40	0	0	0	0	0	0	0	0	400	4	30.00%	30.00%
>.05<=.10	6	570	160	483	140	44	0	0	0	0	0	0	1403	3	53.92%	55.97%
>.10<=.20	210	120	265	62	0	49	414	70	0	0	0	0	1190	3	56.00%	54.24%
>.20<=.30	0	0	0	0	0	56	95	0	0	0	0	0	151	3	63.17%	68.87%
>.30<=.40	200	0	0	0	0	0	85	159	40	0	0	0	484	3	61.73%	63.43%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	25	0	0	0	100	0	20	5	0	0	0	0	150	4	20.00%	13.33%

Non-Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Appendix: Detailed price improvement statistics for the volume transacted through PIM for February 2016.

Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	238	34	0	0	0	0	0	0	0	0	0	0	272	3	28.84%	27.17%
0.02	364	1170	24	0	0	0	0	0	0	0	0	0	1558	3	33.27%	29.19%
0.03	193	1048	251	6	0	0	0	0	0	0	0	0	1498	4	23.74%	19.80%
0.04	262	535	166	73	48	0	0	0	0	0	0	0	1084	3	27.40%	25.87%
0.05	166	279	316	351	190	24	36	0	0	0	0	0	1362	3	44.51%	39.89%
>.05<=.10	21	332	373	293	198	274	214	42	0	0	0	0	1747	4	35.45%	31.86%
>.10<=.20	64	96	69	102	183	127	613	221	5	0	0	0	1480	3	42.60%	40.42%
>.20<=.30	0	0	1	42	1	100	176	201	40	0	0	0	561	3	46.90%	42.26%
>.30<=.40	38	34	40	6	0	10	64	91	58	0	0	0	341	3	51.63%	42.54%
>.40<=.50	4	0	9	21	10	6	41	52	121	51	20	0	335	3	37.67%	27.98%
>.50	0	0	0	0	0	0	8	62	149	112	72	411	814	3	55.66%	48.23%

Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	2697	186	20	2	0	0	0	0	0	0	0	0	2905	3	54.94%	50.08%
0.02	2254	886	75	4	0	0	0	0	0	0	0	0	3219	3	32.38%	26.80%
0.03	1734	1788	304	12	0	0	0	0	0	0	0	0	3838	3	21.57%	20.34%
0.04	931	915	386	94	3	1	0	0	0	0	0	0	2330	4	14.09%	14.00%
0.05	1271	1068	710	165	104	7	10	0	0	0	0	0	3336	3	26.16%	24.02%
>.05<=.10	972	1289	1436	976	365	279	254	1	0	0	0	0	5572	4	19.89%	18.48%
>.10<=.20	516	367	321	456	263	156	666	158	2	0	1	0	2906	3	33.79%	31.58%
>.20<=.30	169	33	77	125	87	113	308	125	4	4	0	0	1045	3	35.69%	27.20%
>.30<=.40	28	126	53	20	16	36	95	158	40	3	0	0	575	3	48.04%	50.42%
>.40<=.50	28	50	25	12	14	3	78	100	16	9	1	0	336	3	49.11%	34.40%
>.50	19	4	6	0	1	13	36	75	123	106	101	158	642	3	53.05%	58.42%

Non-Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	1	0	0	0	0	0	0	0	0	0	0	0	1	5	100.00%	100.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%



Non-Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	52	1384	0	0	0	0	0	0	0	0	0	0	0	1436	2	70.23%	62.78%
0.03	0	1579	0	0	0	0	0	0	0	0	0	0	0	1579	3	55.43%	54.34%
0.04	0	100	100	0	0	0	0	0	0	0	0	0	0	200	3	40.00%	40.00%
0.05	0	200	173	100	80	0	0	0	0	0	0	0	0	553	3	53.43%	48.82%
>.05<=.10	170	620	250	550	207	163	0	0	0	0	0	0	0	1960	4	48.38%	51.58%
>.10<=.20	49	60	246	293	123	98	98	200	0	0	0	0	0	1167	4	39.37%	45.29%
>.20<=.30	1	0	55	0	0	0	185	553	0	0	0	0	0	794	3	62.15%	73.85%
>.30<=.40	0	0	0	0	65	35	0	0	0	0	0	0	0	100	4	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	100	0	45	130	0	275	3	40.00%	40.00%

Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	585	50	0	0	0	0	0	0	0	0	0	0	0	635	3	55.00%	63.62%
0.02	288	210	0	0	0	0	0	0	0	0	0	0	0	498	2	57.34%	53.41%
0.03	385	914	50	0	0	0	0	0	0	0	0	0	0	1349	2	58.26%	71.77%
0.04	0	171	223	48	0	0	0	0	0	0	0	0	0	442	3	78.10%	67.12%
0.05	506	649	825	85	0	100	0	0	0	0	0	0	0	2165	3	67.08%	70.25%
>.05<=.10	486	581	445	458	270	278	304	0	0	0	0	0	0	2822	3	56.22%	56.60%
>.10<=.20	395	82	378	239	337	92	191	50	0	0	0	0	0	1764	3	52.91%	51.71%
>.20<=.30	154	0	30	56	260	0	310	60	0	0	0	0	0	870	3	46.64%	54.14%
>.30<=.40	150	0	100	0	196	100	60	40	0	0	0	0	0	646	2	56.00%	52.17%
>.40<=.50	0	0	0	0	100	0	100	0	0	12	88	0	0	300	2	96.00%	96.00%
>.50	0	0	0	0	55	0	0	44	0	100	0	112	0	311	3	51.25%	51.45%

Non-Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	90	0	0	0	0	0	0	0	0	0	0	90	3	44.44%	44.44%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Appendix: Detailed price improvement statistics for the volume transacted through PIM for March 2016.

Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	282	71	0	0	0	0	0	0	0	0	0	0	353	4	24.86%	22.24%
0.02	369	424	4	0	0	0	0	0	0	0	0	0	797	4	19.42%	15.63%
0.03	106	459	95	0	0	0	0	0	0	0	0	0	660	4	10.75%	10.42%
0.04	43	439	87	35	0	0	0	0	0	0	0	0	604	4	9.60%	5.82%
0.05	134	360	205	101	56	22	20	0	0	0	0	0	898	4	18.68%	11.54%
>.05<=.10	79	301	311	253	153	49	99	0	0	0	0	0	1245	4	24.43%	23.11%
>.10<=.20	107	111	98	61	88	64	185	33	1	0	0	0	748	4	22.74%	19.64%
>.20<=.30	18	23	10	28	6	0	100	80	4	0	0	0	269	4	34.23%	33.57%
>.30<=.40	1	0	0	276	80	2	2	87	1	0	0	0	449	4	18.18%	18.89%
>.40<=.50	0	7	5	0	0	0	4	78	28	9	0	0	131	4	19.30%	22.73%
>.50	10	0	0	0	0	10	5	64	14	67	16	28	214	4	43.68%	37.02%

Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	1067	114	0	0	0	0	0	0	0	0	0	0	0	1181	3	42.81%	35.19%
0.02	2049	786	34	0	0	0	0	0	0	0	0	0	0	2869	3	18.33%	13.94%
0.03	1422	1034	124	5	0	0	0	0	0	0	0	0	0	2585	4	13.45%	12.21%
0.04	751	994	151	4	0	0	0	0	0	0	0	0	0	1900	4	11.17%	8.42%
0.05	1502	1486	409	213	45	36	0	0	0	0	0	0	0	3691	4	20.36%	21.98%
>.05<=.10	1604	1894	985	530	279	181	82	1	0	0	0	0	0	5556	4	15.21%	18.92%
>.10<=.20	523	384	465	339	188	107	222	46	0	0	0	0	0	2274	4	17.49%	20.78%
>.20<=.30	234	68	96	207	104	219	233	43	5	0	0	0	0	1209	4	20.15%	23.79%
>.30<=.40	56	0	83	40	40	12	79	63	31	0	0	0	0	404	4	25.08%	41.89%
>.40<=.50	29	17	15	27	9	25	31	58	12	0	0	0	0	223	3	36.90%	42.60%
>.50	101	23	5	0	1	0	39	133	35	62	25	15	0	439	3	36.56%	37.13%

Non-Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	3	0	0	0	0	0	0	0	0	0	0	0	0	3	4	70.00%	50.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	132	80	0	0	0	0	0	0	0	0	0	0	0	212	4	33.33%	35.56%
0.03	48	140	500	0	0	0	0	0	0	0	0	0	0	688	3	47.50%	73.65%
0.04	50	0	144	0	0	0	0	0	0	0	0	0	0	194	3	20.00%	17.39%
0.05	0	240	660	28	0	0	0	0	0	0	0	0	0	928	3	40.00%	40.00%
>.05<=.10	0	90	216	81	112	672	0	0	0	0	0	0	0	1171	4	33.84%	44.97%
>.10<=.20	107	156	172	213	340	0	90	10	0	0	0	0	0	1088	4	40.22%	46.75%
>.20<=.30	50	381	0	300	0	0	340	50	0	0	0	0	0	1121	4	34.55%	30.06%
>.30<=.40	0	0	0	0	120	80	55	145	0	0	0	0	0	400	4	52.75%	52.75%
>.40<=.50	0	2	0	0	0	0	190	8	0	0	0	0	0	200	5	67.50%	67.50%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Appendix: Detailed price improvement statistics for the volume transacted through PIM for April 2016.

Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	112	35	0	0	0	0	0	0	0	0	0	0	147	4	62.21%	49.77%
0.02	538	554	19	0	0	0	0	0	0	0	0	0	1111	4	24.18%	14.71%
0.03	117	351	72	2	0	0	0	0	0	0	0	0	542	4	16.84%	17.95%
0.04	46	194	130	0	0	0	0	0	0	0	0	0	370	4	21.93%	14.73%
0.05	104	292	253	87	63	14	0	0	0	0	0	0	813	4	23.76%	15.64%
>.05<=.10	104	178	197	276	216	127	160	6	0	0	0	0	1264	4	32.72%	27.87%
>.10<=.20	68	42	41	112	78	31	258	80	0	0	0	0	710	4	30.78%	28.74%
>.20<=.30	0	0	0	4	15	0	86	90	1	1	0	0	197	4	36.69%	26.40%
>.30<=.40	0	48	0	15	2	0	55	116	29	1	0	0	266	4	44.93%	38.32%
>.40<=.50	3	4	0	0	0	0	22	55	49	0	2	0	135	4	45.08%	42.14%
>.50	0	0	0	3	0	0	11	24	58	54	60	60	270	4	55.86%	46.67%

Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	666	39	0	0	0	0	0	0	0	0	0	0	705	3	67.50%	59.59%
0.02	2587	992	2	0	0	0	0	0	0	0	0	0	3581	3	22.14%	20.59%
0.03	1632	1189	148	29	0	0	20	0	0	0	0	0	3018	4	16.16%	13.90%
0.04	1052	1209	236	22	42	0	0	0	0	0	0	0	2561	4	11.50%	11.61%
0.05	1524	1278	466	139	65	4	0	0	0	0	0	0	3476	4	18.79%	17.18%
>.05<=.10	1845	1469	1111	728	232	148	54	0	0	0	0	0	5587	4	16.53%	19.62%
>.10<=.20	462	318	373	272	258	121	357	47	0	0	0	0	2208	4	21.34%	24.85%
>.20<=.30	129	61	78	56	67	56	165	54	11	0	0	0	677	3	28.12%	34.55%
>.30<=.40	78	38	53	42	5	18	79	52	1	0	0	0	366	4	31.31%	30.54%
>.40<=.50	14	0	0	0	0	46	77	25	16	1	1	0	180	4	38.50%	43.78%
>.50	10	0	0	10	0	2	32	59	36	7	35	23	214	4	39.82%	44.19%

Non-Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	1	0	0	0	0	0	0	0	0	0	0	0	0	1	5	100.00%	100.00%
0.02	9	1	0	0	0	0	0	0	0	0	0	0	0	10	5	35.56%	42.86%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	1	0	0	0	0	0	0	0	0	0	0	0	1	5	100.00%	100.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	2	1	0	0	0	0	0	0	0	0	0	0	0	3	4	33.33%	50.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	540	0	0	0	0	0	0	0	0	0	0	0	0	540	2	100.00%	100.00%
0.02	325	200	0	0	0	0	0	0	0	0	0	0	0	525	3	57.50%	47.34%
0.03	0	70	0	0	0	0	0	0	0	0	0	0	0	70	6	40.00%	40.00%
0.04	0	0	0	111	0	0	0	0	0	0	0	0	0	111	2	100.00%	100.00%
0.05	95	100	500	112	0	0	0	0	0	0	0	0	0	807	2	40.04%	48.27%
>.05<=.10	120	440	53	0	174	20	221	0	0	0	0	0	0	1028	4	40.02%	35.63%
>.10<=.20	0	286	0	24	133	122	100	0	0	0	0	0	0	665	5	36.67%	36.99%
>.20<=.30	87	0	60	0	0	0	160	250	0	0	0	0	0	557	4	46.50%	29.64%
>.30<=.40	0	2	0	0	0	0	0	110	0	0	0	0	0	112	3	1.61%	1.79%
>.40<=.50	0	0	0	0	0	0	0	50	0	0	0	0	0	50	6	40.00%	40.00%
>.50	0	0	0	0	0	0	0	0	20	0	0	0	0	20	5	0.00%	0.00%

Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	340	0	0	0	0	0	0	0	0	0	0	0	0	340	2	79.00%	81.44%
0.02	319	76	5	0	0	0	0	0	0	0	0	0	0	400	4	54.40%	49.00%
0.03	30	190	0	0	0	0	0	0	0	0	0	0	0	220	3	46.67%	44.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	527	124	140	200	46	0	0	0	0	0	0	0	0	1037	3	64.86%	62.68%
>.05<=.10	556	729	74	130	22	30	68	0	0	0	0	0	0	1609	3	73.45%	76.83%
>.10<=.20	592	127	190	265	0	28	148	0	0	0	0	0	0	1350	3	45.02%	54.04%
>.20<=.30	649	294	40	0	0	77	100	187	62	0	0	0	0	1409	3	55.29%	57.77%
>.30<=.40	30	50	0	50	0	20	100	0	0	0	0	0	0	250	3	70.00%	64.00%
>.40<=.50	80	0	90	0	0	0	60	80	0	118	0	0	0	428	3	61.57%	57.94%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Appendix: Detailed price improvement statistics for the volume transacted through PIM for May 2016.

Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	218	11	1	0	0	0	0	0	0	0	0	0	230	3	50.49%	41.12%
0.02	177	920	26	5	0	0	0	0	0	0	0	0	1128	3	59.71%	52.39%
0.03	36	324	197	41	0	0	0	0	0	0	0	0	598	3	55.35%	51.56%
0.04	2	347	146	66	3	0	0	0	0	0	0	0	564	3	55.38%	47.18%
0.05	20	114	246	165	346	67	93	0	0	0	0	0	1051	3	61.56%	63.33%
>.05<=.10	64	106	205	173	343	277	302	0	0	0	0	0	1470	3	64.07%	61.21%
>.10<=.20	54	24	42	44	54	107	521	70	0	0	0	0	916	3	59.47%	56.88%
>.20<=.30	2	0	0	0	16	7	58	218	23	0	0	0	324	2	63.06%	55.08%
>.30<=.40	0	0	0	0	0	0	16	115	93	27	0	0	251	3	52.77%	47.81%
>.40<=.50	0	0	0	0	0	0	0	84	38	22	8	0	152	2	70.43%	65.58%
>.50	0	0	0	0	0	0	0	32	40	54	102	204	432	2	78.44%	84.72%

Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	2451	217	12	0	0	0	0	0	0	0	0	0	2680	3	63.00%	58.03%
0.02	2799	1104	40	0	0	0	0	0	0	0	0	0	3943	3	50.94%	43.47%
0.03	1649	912	127	14	3	0	0	0	0	0	0	0	2705	3	40.74%	42.26%
0.04	808	520	131	28	1	0	0	0	0	0	0	0	1488	3	32.14%	27.09%
0.05	2196	688	515	219	123	10	6	0	1	0	0	0	3758	3	45.36%	48.11%
>.05<=.10	1069	1085	731	354	228	158	154	3	0	0	0	0	3782	3	37.15%	35.80%
>.10<=.20	816	272	174	224	162	160	224	74	0	0	0	0	2106	3	41.29%	44.07%
>.20<=.30	117	42	51	17	82	50	106	119	18	0	0	0	602	3	50.72%	49.01%
>.30<=.40	87	1	2	24	14	60	37	78	2	2	0	0	307	3	58.78%	51.14%
>.40<=.50	1	5	4	2	2	10	5	26	2	3	0	0	60	3	25.65%	30.77%
>.50	47	0	0	2	1	0	20	74	18	16	16	73	267	2	71.58%	62.17%

Non-Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	6	0	0	0	0	0	0	0	0	0	0	0	6	3	72.73%	50.00%
0.02	8	0	0	0	0	0	0	0	0	0	0	0	8	6	40.00%	40.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%



Non-Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	52	0	0	0	0	0	0	0	0	0	0	0	52	3	48.61%	48.08%
0.02	44	0	0	0	0	0	0	0	0	0	0	0	44	2	70.00%	86.36%
0.03	14	10	0	0	0	0	0	0	0	0	0	0	24	4	41.67%	41.67%
0.04	5	0	0	0	0	0	0	0	0	0	0	0	5	4	40.00%	40.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	2	0	0	0	0	2	6	100.00%	100.00%
>.20<=.30	0	0	0	0	0	0	0	1	0	0	0	0	1	5	100.00%	100.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	285	0	0	0	0	0	0	0	0	0	0	285	2	76.00%	73.68%
0.03	0	200	0	0	0	0	0	0	0	0	0	0	200	2	74.50%	74.50%
0.04	0	64	100	0	0	0	0	0	0	0	0	0	164	2	100.00%	100.00%
0.05	0	100	0	110	90	0	0	0	0	0	0	0	300	4	55.00%	50.00%
>.05<=.10	0	0	200	120	154	236	81	0	0	0	0	0	791	3	42.22%	43.49%
>.10<=.20	0	0	0	0	115	0	0	0	0	0	0	0	115	2	100.00%	100.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	100	0	0	0	0	100	5	40.00%	40.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	1591	120	0	0	0	0	0	0	0	0	0	0	1711	3	66.91%	66.74%
0.02	590	870	20	0	0	0	0	0	0	0	0	0	1480	2	70.59%	73.23%
0.03	104	150	0	0	0	0	0	0	0	0	0	0	254	3	55.19%	51.97%
0.04	100	200	100	0	0	0	0	0	0	0	0	0	400	3	70.00%	70.00%
0.05	0	200	0	0	0	0	0	0	0	0	0	0	200	4	40.00%	40.00%
>.05<=.10	0	60	245	0	0	0	100	0	0	0	0	0	405	2	88.00%	85.19%
>.10<=.20	60	0	0	0	40	100	100	0	0	0	0	0	300	2	80.00%	80.00%
>.20<=.30	0	60	0	40	0	0	0	50	60	0	0	0	210	2	60.00%	57.14%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer >=50 contracts; Not at NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Appendix: Detailed price improvement statistics for the volume transacted through PIM for June 2016.

Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	699	88	12	0	0	0	0	0	0	0	0	0	799	3	47.20%	43.44%
0.02	246	3606	27	19	1	2	0	0	0	0	0	0	3901	2	71.91%	72.21%
0.03	91	1176	661	73	2	4	0	0	0	0	0	0	2007	2	67.72%	63.41%
0.04	33	405	728	324	21	6	4	0	0	0	0	0	1521	2	68.60%	64.71%
0.05	60	173	516	772	638	80	77	3	0	0	0	0	2319	2	70.75%	66.79%
>.05<=.10	9	138	523	677	904	810	617	18	0	0	0	0	3696	2	69.24%	64.87%
>.10<=.20	24	87	33	164	296	277	1048	388	3	10	0	0	2330	2	63.36%	61.68%
>.20<=.30	0	1	1	36	2	32	184	544	80	2	3	0	885	2	65.21%	58.95%
>.30<=.40	0	0	0	0	1	6	48	216	274	19	0	0	564	2	68.22%	61.42%
>.40<=.50	0	0	0	0	0	0	2	128	198	104	3	0	435	2	62.85%	68.28%
>.50	0	5	0	0	30	0	29	72	419	335	268	642	1800	2	64.81%	67.74%

Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	7770	687	91	57	19	0	0	0	0	0	0	0	8624	3	68.12%	64.30%
0.02	3956	3675	321	69	13	11	0	0	0	0	0	0	8045	2	65.36%	58.73%
0.03	1941	1968	698	54	7	13	0	0	0	0	0	0	4681	2	61.55%	59.44%
0.04	955	1144	738	159	19	8	5	0	0	0	0	0	3028	2	54.73%	49.33%
0.05	1890	967	871	533	386	97	141	52	0	0	0	0	4937	2	58.19%	58.09%
>.05<=.10	1552	1072	988	997	628	355	474	18	0	0	0	0	6084	2	54.70%	55.52%
>.10<=.20	722	345	338	295	271	358	443	233	1	0	0	0	3006	2	53.59%	56.35%
>.20<=.30	206	30	66	15	95	86	256	185	84	0	0	0	1023	2	60.53%	58.52%
>.30<=.40	15	3	6	1	10	52	98	183	51	56	0	0	475	2	51.65%	47.90%
>.40<=.50	49	1	0	9	4	0	28	167	64	28	7	0	357	2	69.46%	73.67%
>.50	12	0	0	5	12	3	71	141	287	199	110	307	1147	2	66.21%	67.39%

Non-Customer <50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	2	0	0	0	0	0	0	0	0	0	0	0	2	4	100.00%	100.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer <50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50				
0.01	10	0	0	0	0	0	0	0	0	0	0	0	10	3	40.00%	40.00%
0.02	20	0	0	0	0	0	0	0	0	0	0	0	20	3	40.00%	40.00%
0.03	24	0	0	0	0	0	0	0	0	0	0	0	24	3	41.67%	41.67%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	20	0	0	0	0	0	0	0	0	0	20	2	100.00%	100.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	161	125	0	0	0	0	0	0	0	0	0	0	0	286	3	77.03%	82.21%
0.02	44	1074	0	0	0	0	0	0	0	0	0	0	0	1118	2	80.00%	81.14%
0.03	0	250	0	0	0	0	0	0	0	0	0	0	0	250	2	80.00%	76.00%
0.04	0	213	210	74	0	0	0	0	0	0	0	0	0	497	2	65.00%	65.42%
0.05	0	0	200	150	101	50	0	0	0	0	0	0	0	501	2	80.00%	78.04%
>.05<=.10	0	0	100	390	200	300	100	0	0	0	0	0	0	1090	2	54.93%	51.19%
>.10<=.20	0	0	117	150	107	400	470	150	0	0	0	0	0	1394	2	76.02%	76.40%
>.20<=.30	0	0	0	0	0	0	0	100	0	0	0	0	0	100	2	50.00%	50.00%
>.30<=.40	0	0	0	0	0	0	0	100	0	0	0	0	0	100	4	53.00%	53.00%
>.40<=.50	0	0	0	0	0	0	0	100	200	0	0	0	0	300	3	73.33%	73.33%
>.50	0	0	0	0	0	0	50	100	50	0	0	0	0	200	3	66.67%	75.00%

Customer >=50 contracts; Not At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	2704	129	20	0	0	0	0	0	0	0	0	0	0	2853	3	54.81%	57.38%
0.02	782	901	0	0	0	0	0	0	0	0	0	0	0	1683	3	54.53%	52.46%
0.03	0	370	0	0	0	0	0	0	0	0	0	0	0	370	2	88.86%	89.46%
0.04	145	265	100	50	0	0	0	0	0	0	0	0	0	560	2	76.00%	76.64%
0.05	441	100	337	200	205	50	35	47	0	0	0	0	0	1415	2	78.33%	63.78%
>.05<=.10	0	50	300	100	50	100	100	0	0	0	0	0	0	700	2	80.00%	82.86%
>.10<=.20	100	100	0	0	0	160	300	0	0	0	0	0	0	660	2	81.22%	81.97%
>.20<=.30	0	0	50	0	0	0	0	100	0	0	0	0	0	150	2	100.00%	100.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	50	0	0	0	0	0	50	2	100.00%	100.00%
>.50	0	0	0	0	0	0	0	50	0	0	0	0	0	50	3	26.00%	26.00%

Non-Customer >=50 contracts; At NBBO

Spread	Improvement												Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives	
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50	>.50					
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	100	0	0	0	0	0	0	0	0	0	0	0	100	2	100.00%	100.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

Non-Customer >=50 contracts; Not At NBBO

Spread	Improvement											Total Contracts Traded	Average Number of Participant	Average Percent of Orders Initiator Receives	Average Percent of Contracts Initiator Receives		
	0	0.01	0.02	0.03	0.04	0.05	>.05<=.10	>.10<=.20	>.20<=.30	>.30<=.40	>.40<=.50					>.50	
0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.05<=.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.10<=.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.20<=.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.30<=.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.40<=.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
>.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%

PIM Early Termination Data (Jan 2016 - June 2016)

	Jan. 2016	Feb. 2016	Mar. 2016	Apr. 2016	May. 2016	Jun. 2016	Totals/%
Early Terminated Auctions	10	16	4	8	11	16	65
% Early Terminated Auctions	0.05%	0.11%	0.03%	0.06%	0.13%	0.10%	0.08%
Traded Contracts in Early Terminated Auctions	38	123	33	23	44	64	325
% Traded Contracts in Early Terminated Auctions	0.08%	0.21%	0.08%	0.06%	0.12%	0.08%	0.11%
% Early Terminated Auctions Receiving PIM	50.00%	68.75%	75.00%	25.00%	36.36%	50.00%	50.77%
% Traded Contracts in Early Terminated Auctions Receiving PIM	39.47%	78.86%	78.79%	26.09%	15.91%	31.25%	52.00%
Amount of PI Received by Early Terminated Auctions	\$0.21	\$4.86	\$1.08	\$0.29	\$0.08	\$1.44	\$7.96

**EXHIBIT 5**

Deleted text is [bracketed]. New text is underlined.

**ISE GEMINI, LLC RULES**

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**Chapter 7 Doing Business on the Exchange**

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**723. Price Improvement Mechanism for Crossing Transactions**

(a) The Price Improvement Mechanism is a process by which an Electronic Access Member can provide price improvement opportunities for a transaction wherein the Electronic Access Member seeks to facilitate an order it represents as agent, and/or a transaction wherein the Electronic Access Member solicited interest to execute against an order it represents as agent (a “Crossing Transaction”).

(b) Crossing Transaction Entry. A Crossing Transaction is comprised of the order the Electronic Access Member represents as agent (the “Agency Order”) and a counter-side order for the full size of the Agency Order (the “Counter-Side Order”). The Counter-Side Order may represent interest for the Member’s own account, or interest the Member has solicited from one or more other parties, or a combination of both.

For the period beginning January 19, 2017 until a date specified by the Exchange in a Regulatory Information Circular, which date shall be no later than April 15, 2017, the following provisions shall be in effect:

(1) If the Agency Order is for less than 50 option contracts, and if the difference between the National Best Bid and National Best Offer (“NBBO”) is \$0.01, the Electronic Access Member shall not enter a Crossing Transaction unless such Crossing Transaction is entered at one minimum price improvement increment better than the NBBO on the opposite side of the market from the Agency Order and better than the limit order or quote on the ISE Gemini order book on the same side of the Agency Order. Failure to provide such price improvement will subject Members to the fines set forth in ISE Rule 1614(d)(4).

(1)2) If the Agency Order is for 50 option contracts or more, or if the difference between the NBBO is greater than \$0.01, [A]a Crossing Transaction must be entered only at a price that is equal to or better than the [national best bid or offer (“]NBBO[”)] and better than the limit order or quote on the ISE Gemini order book on the same side of the Agency Order.

(2)3) The Crossing Transaction may be priced in one-cent increments.

([3]4) The Crossing Transaction may not be canceled, but the price of the Counter-Side Order may be improved during the exposure period.

After the date specified by the Exchange in a Regulatory Information Circular, which date shall be no later than April 15, 2017, the following provisions shall be in effect:

(1) If the Agency Order is for less than 50 option contracts, and if the difference between the National Best Bid and National Best Offer (“NBBO”) is \$0.01, the Crossing Transaction must be entered at one minimum price improvement increment better than the NBBO on the opposite side of the market from the Agency Order and better than the limit order or quote on the ISE Gemini order book on the same side of the Agency Order.

(2) If the Agency Order is for 50 option contracts or more, or if the difference between the NBBO is greater than \$0.01, a Crossing Transaction must be entered only at a price that is equal to or better than the national best bid or offer (“NBBO”) and better than the limit order or quote on the ISE Gemini order book on the same side of the Agency Order.

(3) The Crossing Transaction may be priced in one-cent increments.

(4) The Crossing Transaction may not be canceled, but the price of the Counter-Side Order may be improved during the exposure period.

\* \* \* \* \*

### ***Supplementary Material to Rule 723***

.01 - .02 No Change.

.03 [Initially, and for at least a Pilot Period expiring on January 18, 2017, t]There will be no minimum size requirements for orders to be eligible for the Price Improvement Mechanism. [During the Pilot Period, the Exchange will submit certain data, periodically as required by the Commission, to provide supporting evidence that, among other things, there is meaningful competition for all size orders within the Price Improvement Mechanism, that there is significant price improvement for all orders executed through the Price Improvement Mechanism, and that there is an active and liquid market functioning on the Exchange outside of the Price Improvement Mechanism. Any raw data which is submitted to the Commission will be provided on a confidential basis.]

.04 No Change.

[.05 Paragraphs (c)(5) and (d)(4) will be effective for a Pilot Period expiring on January 18, 2017. During the Pilot Period, the Exchange will submit certain data relating

to the frequency with which the exposure period is terminated by unrelated orders. Any raw data which is submitted to the Commission will be provided on a confidential basis.]

.0[6]5 No Change.

.0[7]6 No Change.

.0[8]7 Reserved.

.0[9]8 No Change.

.[10]9 No Change.

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