

Required fields are shown with yellow backgrounds and asterisks.

Page 1 of * 56	SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549 Form 19b-4	File No.* SR - 2019 - * 23 Amendment No. (req. for Amendments *)
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Filing by Miami International Securities Exchange, 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 type="checkbox"/>	Section 19(b)(3)(A) * <input checked="" type="checkbox"/>	Section 19(b)(3)(B) * <input type="checkbox"/>
Pilot <input type="checkbox"/>			Rule		
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 checked="" 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 checked="" type="checkbox"/>	Exhibit 3 Sent As Paper Document <input checked="" type="checkbox"/>
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Description
Provide a brief description of the action (limit 250 characters, required when Initial is checked *).

Amend the Fee Schedule to modify certain connectivity fees

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 * Joseph Last Name * Ferraro
Title * Senior Vice President and Deputy General Counsel
E-mail * jferraro@miami-holdings.com
Telephone * (609) 897-8492 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 *)
Senior Vice President and Deputy General Counsel

Date 04/29/2019
By Joseph Ferraro (Name *)

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.

jferraro@miami-holdings.com

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

For complete Form 19b-4 instructions please refer to the EFFS 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) Miami International Securities Exchange, LLC (“MIAX” or “Exchange”), pursuant to the provisions of Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)¹ and Rule 19b-4 thereunder,² proposes to amend the MIAX Fee Schedule (the “Fee Schedule”) to modify certain of the Exchange’s system connectivity fees.

A notice of the proposed rule change for publication in the Federal Register is attached hereto as Exhibit 1, and a copy of the applicable section of the proposed Fee Schedule is attached hereto as Exhibit 5.

The Exchange initially filed the proposal on March 1, 2019 (SR-MIAX-2019-10). That filing has been withdrawn and replaced with the current filing (SR-MIAX-2019-23).

(b) Not applicable.

(c) Not applicable.

2. Procedures of the Self-Regulatory Organization

The proposed rule change was approved by the Chief Executive Officer of the Exchange pursuant to authority delegated by the MIAX Board of Directors on January 31, 2019. Exchange staff will advise the Board of Directors of any action taken pursuant to delegated authority. No other action by the Exchange is necessary for the filing of the proposed rule change.

Questions and comments on the proposed rule change may be directed to Joseph W. Ferraro, Senior Vice President and Deputy General Counsel, at 609-897-8492.

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

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

a. Purpose

The Exchange proposes to amend the Fee Schedule regarding connectivity to the Exchange. Specifically, the Exchange proposes to amend Sections 5a) and b) of the Fee Schedule to increase the network connectivity fees for the 1 Gigabit (“Gb”) fiber connection, the 10Gb fiber connection, and the 10Gb ultra-low latency (“ULL”) fiber connection, which are charged to both Members³ and non-Members of the Exchange for connectivity to the Exchange’s primary/secondary facility. The Exchange also proposes to increase the network connectivity fees for the 1Gb and 10Gb fiber connections for connectivity to the Exchange’s disaster recovery facility. Each of these connections are shared connections, and thus can be utilized to access both the Exchange and the Exchange’s affiliate, MIAX PEARL, LLC (“MIAX PEARL”). These proposed fee increases are collectively referred to herein as the “Proposed Fee Increases.”

The Exchange initially filed the Proposed Fee Increases on July 31, 2018, designating the Proposed Fee Increases effective August 1, 2018.⁴ The First Proposed Rule Change was published for comment in the Federal Register on August 13, 2018.⁵ The Commission received

³ The term “Member” means an individual or organization approved to exercise the trading rights associated with a Trading Permit. Members are deemed “members” under the Exchange Act. See Exchange Rule 100.

⁴ See Securities Exchange Act Release No. 83786 (August 7, 2018), 83 FR 40106 (August 13, 2018)(SR-MIAX-2018-19) (the “First Proposed Rule Change”).

⁵ Id.

one comment letter on the proposal.⁶ The Proposed Fee Increases remained in effect until they were temporarily suspended pursuant to a suspension order (the “Suspension Order”) issued by the Commission on September 17, 2018.⁷ The Suspension Order also instituted proceedings to determine whether to approve or disapprove the First Proposed Rule Change.⁸

The Healthy Markets Letter argued that the Exchange did not provide sufficient information in its filing to support a finding that the proposal is consistent with the Act. Specifically, the Healthy Markets Letter objected to the Exchange’s reliance on the fees of other exchanges to demonstrate that its fee increases are consistent with the Act. In addition, the Healthy Markets Letter argued that the Exchange did not offer any details to support its basis for asserting that the proposed fee increases are consistent with the Act.

On October 5, 2018, the Exchange withdrew the First Proposed Rule Change.⁹ The Exchange refiled the Proposed Fee Increases on September 18, 2018, designating the Proposed Fee Increases immediately effective.¹⁰ The Second Proposed Rule Change was published for

⁶ See Letter from Tyler Gellasch, Executive Director, The Healthy Markets Association (“Healthy Markets”), to Brent J. Fields, Secretary, Commission, dated September 4, 2018 (“Healthy Markets Letter”).

⁷ See Securities Exchange Act Release No. 34-84175 (September 17, 2018), 83 FR 47955 (September 21, 2018)(SR-MIAX-2018-19) (Suspension of and Order Instituting Proceedings To Determine Whether To Approve or Disapprove a Proposed Rule Change To Amend the Fee Schedule Regarding Connectivity Fees for Members and Non-Members).

⁸ Id.

⁹ See Securities Exchange Act Release No. 84398 (October 10, 2018), 83 FR 52264 (October 16, 2018)(SR-MIAX-2018-19 (Notice of Withdrawal of a Proposed Rule Change To Amend the Fee Schedule Regarding Connectivity Fees for Members and Non-Members).

¹⁰ See Securities Exchange Act Release No. 84357 (October 3, 2018), 83 FR 50976 (October 10, 2018)(SR-MIAX-2018-25) (the “Second Proposed Rule Change”) (Notice of Filing of a Proposed Rule Change To Amend the Fee Schedule Regarding

comment in the Federal Register on October 10, 2018.¹¹ The Commission received one comment letter on the proposal.¹² The Proposed Fee Increases remained in effect until they were temporarily suspended pursuant to a suspension order (the “Second Suspension Order”) issued by the Commission on October 3, 2018.¹³ The Second Suspension Order also instituted proceedings to determine whether to approve or disapprove the Second Proposed Rule Change.¹⁴

The SIFMA Letter argued that the Exchange did not provide sufficient information in its filing to support a finding that the proposal should be approved by the Commission after further review of the proposed fee increases. Specifically, the SIFMA Letter objected to the Exchange’s reliance on the fees of other exchanges to justify its own fee increases. In addition, the SIFMA Letter argued that the Exchange did not offer any details to support its basis for asserting that the proposed fee increases are reasonable. On November 23, 2018, the Exchange withdrew the Second Proposed Rule Change.¹⁵

Connectivity Fees for Members and Non-Members; Suspension of and Order Instituting Proceedings To Determine Whether To Approve or Disapprove the Proposed Rule Change).

¹¹ Id.

¹² See Letter from Theodore R. Lazo, Managing Director and Associate General Counsel, and Ellen Greene, Managing Director Financial Services Operations, The Securities Industry and Financial Markets Association (“SIFMA”), to Brent J. Fields, Secretary, Commission, dated October 15, 2018 (“SIFMA Letter”).

¹³ See supra note 10.

¹⁴ Id.

¹⁵ See Securities Exchange Act Release No. 84650 (November 26, 2018), 83 FR 61705 (November 30, 2018)(SR-MIAX-2018-25) (Notice of Withdrawal of a Proposed Rule Change To Amend the Fee Schedule Regarding Connectivity Fees for Members and Non-Members.).

The Exchange refiled the Proposed Fee Increases on March 1, 2019, designating the Proposed Fee Increases immediately effective.¹⁶ The Third Proposed Rule Change was published for comment in the Federal Register on March 20, 2019.¹⁷ The Third Proposed Rule Change provided new information, including additional detail about the market participants impacted by the Proposed Fee Increases, as well as the additional costs incurred by the Exchange associated with providing the connectivity alternatives, in order to provide more transparency and support relating to the Exchange's belief that the Proposed Fee Increases are reasonable, equitable, and non-discriminatory, and to provide sufficient information for the Commission to determine that the Proposed Fee Increases are consistent with the Act.

On March 29, 2019, the Commission issued its Order Disapproving Proposed Rule Changes to Amend the Fee Schedule on the BOX Market LLC Options Facility to Establish BOX Connectivity Fees for Participants and Non-Participants Who Connect to the BOX Network (the "BOX Order").¹⁸ In the BOX Order, the Commission highlighted a number of deficiencies it found in three separate rule filings by BOX Exchange LLC ("BOX") to increase BOX's connectivity fees that prevented the Commission from finding that BOX's proposed connectivity fees were consistent with the Act. These deficiencies relate to topics that the Commission believes should be discussed in a connectivity fee filing.

¹⁶ See Securities Exchange Act Release No. 85318 (March 14, 2019), 84 FR 10363 (March 20, 2019)(SR-MIAX-2019-10) (the "Third Proposed Rule Change") (Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Its Fee Schedule).

¹⁷ Id.

¹⁸ See Securities Exchange Act Release No. 85459 (March 29, 2019), 84 FR 13363 (April 4, 2019)(SR-BOX-2018-24, SR-BOX-2018-37, and SR-BOX-2019-04).

After the BOX Order was issued, the Commission received four comment letters on the Third Proposed Rule Change.¹⁹

The Second SIFMA Letter argued that the Exchange did not provide sufficient information in its Third Proposed Rule Change to support a finding that the proposal should be approved by the Commission after further review of the proposed fee increases. Specifically, the Second SIFMA Letter argued that the Exchange's market data fees and connectivity fees were not constrained by competitive forces, the Exchange's filing lacked sufficient information regarding cost and competition, and that the Commission should establish a framework for determining whether fees for exchange products and services are reasonable when those products and services are not constrained by significant competitive forces.

The IEX Letter argued that the Exchange did not provide sufficient information in its Third Proposed Rule Change to support a finding that the proposal should be approved by the Commission and that the Commission should extend the time for public comment on the Third Proposed Rule Change. Despite the objection to the Proposed Fee Increases, the IEX Letter did find that "MIAX has provided more transparency and analysis in these filings than other exchanges have sought to do for their own fee increases."²⁰ The IEX Letter specifically argued that the Proposed Fee Increases were not constrained by competition, the Exchange should

¹⁹ See Letter from Joseph W. Ferraro III, SVP & Deputy General Counsel, MIAX, to Vanessa Countryman, Acting Secretary, Commission, dated April 5, 2019 ("MIAX Letter"); Letter from Theodore R. Lazo, Managing Director and Associate General Counsel, SIFMA, to Vanessa Countryman, Acting Secretary, Commission, dated April 10, 2019 ("Second SIFMA Letter"); Letter from John Ramsay, Chief Market Policy Officer, Investors Exchange LLC, to Vanessa Countryman, Acting Secretary, Commission, dated April 10, 2019 ("IEX Letter"); and Letter from Tyler Gellasch, Executive Director, Healthy Markets, to Brent J. Fields, Secretary, Commission, dated April 18, 2019 ("Second Healthy Markets Letter").

²⁰ See IEX Letter, pg. 1.

provide data on the Exchange's actual costs and how those costs relate to the product or service in question, and whether and how MIAX considered changes to transaction fees as an alternative to offsetting exchange costs.

The Second Healthy Markets Letter did not object to the Third Proposed Rule Change and the information provided by the Exchange in support of the Proposed Fee Increases. Specifically, the Second Healthy Markets Letter stated that the Third Proposed Rule Change was "remarkably different," and went on to further state as follows:

The instant MIAX filings -- along with their April 5th supplement -- provide much greater detail regarding users of connectivity, the market for connectivity, and costs than the Initial MIAX Filings. They also appear to address many of the issues raised by the Commission staff's BOX disapproval order. This third round of MIAX filings suggests that MIAX is operating in good faith to provide what the Commission and staff seek.²¹

On April 29, 2019, the Exchange withdrew the Third Proposed Rule Change.²² The Exchange is now re-filing the Proposed Fee Increases to squarely and comprehensively address each and every topic raised for discussion in the BOX Order, the IEX Letter and the Second SIFMA Letter to ensure that the Proposed Fee Increases are reasonable, equitable, and non-discriminatory, and that the Commission should find that the Proposed Fee Increases are consistent with the Act. The proposed rule change is immediately effective upon filing with the Commission pursuant to Section 19(b)(3)(A) of the Act.

The Exchange currently offers various bandwidth alternatives for connectivity to the Exchange, to its primary and secondary facilities, consisting of a 1Gb fiber connection, a 10Gb fiber connection, and a 10Gb ULL fiber connection. The 10Gb ULL offering uses an ultra-low

²¹ See Second Healthy Markets Letter, pg. 2.

²² See SR-MIAX-2019-10).

latency switch, which provides faster processing of messages sent to it in comparison to the switch used for the other types of connectivity. The Exchange currently assesses the following monthly network connectivity fees to both Members and non-Members for connectivity to the Exchange's primary/secondary facility: (a) \$1,100 for the 1Gb connection; (b) \$5,500 for the 10Gb connection; and (c) \$8,500 for the 10Gb ULL connection. The Exchange also assesses to both Members and non-Members a monthly per connection network connectivity fee of \$500 for each 1Gb connection to the disaster recovery facility and a monthly per connection network connectivity fee of \$2,500 for each 10Gb connection to the disaster recovery facility.

The Exchange's MIAX Express Network Interconnect ("MENI") can be configured to provide Members and non-Members of the Exchange network connectivity to the trading platforms, market data systems, test systems, and disaster recovery facilities of both the Exchange and its affiliate, MIAX PEARL, via a single, shared connection. Members and non-Members utilizing the MENI to connect to the trading platforms, market data systems, test systems and disaster recovery facilities of the Exchange and MIAX PEARL via a single, shared connection are assessed only one monthly network connectivity fee per connection, regardless of the trading platforms, market data systems, test systems, and disaster recovery facilities accessed via such connection.

The Exchange proposes to increase the monthly network connectivity fees for such connections for both Members and non-Members. The network connectivity fees for connectivity to the Exchange's primary/secondary facility will be increased as follows: (a) from \$1,100 to \$1,400 for the 1Gb connection; (b) from \$5,500 to \$6,100 for the 10Gb connection; and (c) from \$8,500 to \$9,300 for the 10Gb ULL connection. The network connectivity fees for

connectivity to the Exchange's disaster recovery facility will be increased as follows: (a) from \$500 to \$550 for the 1Gb connection; and (b) from \$2,500 to \$2,750 for the 10Gb connection.

b. Statutory Basis

The Exchange believes that its proposal to amend its Fee Schedule is consistent with Section 6(b) of the Act²³ in general, and furthers the objectives of Section 6(b)(4) of the Act²⁴ in particular, in that it provides for the equitable allocation of reasonable dues, fees and other charges among Exchange Members and issuers and other persons using any facility or system which the Exchange operates or controls. The Exchange also believes the proposal furthers the objectives of Section 6(b)(5) of the Act²⁵ in that it is designed to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general to protect investors and the public interest and is not designed to permit unfair discrimination between customer, issuers, brokers and dealers.

First, the Exchange believes that its proposal is consistent with Section 6(b)(4) of the Act, in that the Proposed Fee Changes are fair, equitable and not unreasonably discriminatory, because the fees for the connectivity alternatives available on the Exchange, as proposed to be increased, are competitive and market-driven. The U.S. options markets are highly competitive (there are currently 16 options markets) and a reliance on competitive markets is an appropriate means to ensure equitable and reasonable prices.

²³ 15 U.S.C. 78f(b).

²⁴ 15 U.S.C. 78f(b)(4).

²⁵ 15 U.S.C. 78f(b)(5).

The Exchange acknowledges that there is no regulatory requirement that any market participant connect to the Exchange, or that any participant connect at any specific connection speed. The rule structure for options exchanges are, in fact, fundamentally different from those of equities exchanges. In particular, options market participants are not forced to connect to (and purchase market data from) all options exchanges, as shown by the number of Members of MIAX as compared to the much greater number of members at other options exchanges (as further detailed below). Not only does MIAX have less than half the number of members as certain other options exchanges, but there are also a number of the Exchange's Members that do not connect directly to MIAX. Further, of the number of Members that connect directly to MIAX, many such Members do not purchase market data from MIAX. There are a number of large market makers and broker-dealers that are members of other options exchange but not Members of MIAX. For example, the following are not Members of MIAX: The D. E. Shaw Group, CTC, XR Trading LLC, Hardcastle Trading AG, Ronin Capital LLC, Belvedere Trading, LLC, Bluefin Trading, and HAP Capital LLC. In addition, of the market makers that are connected to MIAX, it is the individual needs of the market maker that require whether they need one connection or multiple connections to the Exchange. The Exchange has market maker Members that only purchase one connection (10Gb or 10Gb ULL) and the Exchange has market maker Members that purchase multiple connections. It is all driven by the business needs of the market maker. Market makers that are consolidators that target resting order flow tend to purchase more connectivity than market makers that simply quote all symbols on the Exchange. Even though non-Members purchase and resell 10Gb and 10Gb ULL connections to both Members and non-Members, no market makers currently connect to the Exchange indirectly through such resellers.

SIFMA's argument that all broker-dealers are required to connect to all exchanges is not true in the options markets. The options markets have evolved differently than the equities markets both in terms of market structure and functionality. For example, there are many order types that are available in the equities markets that are not utilized in the options markets, which relate to mid-point pricing and pegged pricing which require connection to the SIPs and each of the equities exchanges in order to properly execute those orders in compliance with best execution obligations. In addition, in the options markets there is a single SIP (OPRA) versus two SIPs in the equities markets, resulting in few hops and thus alleviating the need to connect directly to all the options exchanges. Additionally, in the options markets, the linkage routing and trade through protection are handled by the exchanges, not by the individual members. Thus not connecting to an options exchange or disconnecting from an options exchange does not potentially subject a broker-dealer to violate order protection requirements as suggested by SIFMA. Gone are the days when the retail brokerage firms (the Fidelity's, the Schwab's, the eTrade's) were members of the options exchanges – they are not members of MIAX or its affiliates, MIAX PEARL and MIAX Emerald, they do not purchase connectivity to MIAX, and they do not purchase market data from MIAX. The Exchange recognizes that the decision of whether to connect to the Exchange is separate and distinct from the decision of whether and how to trade on the Exchange. The Exchange acknowledges that many firms may choose to connect to the Exchange, but ultimately not trade on it, based on their particular business needs.

To assist prospective Members or firms considering connecting to MIAX, the Exchange provides information about the Exchange's available connectivity alternatives.²⁶ The decision of which type of connectivity to purchase, or whether to purchase connectivity at all for a particular exchange, is based on the business needs of the firm. For example, if the firm wants to receive the top-of-market data feed product or depth data feed product, due to the amount/size of data contained in those feeds, such firm would need to purchase either the 10Gb or 10Gb ULL connection. The 1Gb connection is too small to support those data feed products. MIAX notes that there are twelve (12) Members that only purchase the 1Gb connectivity alternative. Thus, while there is a meaningful percentage of purchasers of only 1Gb connections (12 of 33), by definition, those twelve (12) members purchase connectivity that cannot support the top-of-market data feed product or depth data feed product and thus they do not purchase such data feed products. Accordingly, purchasing market data is a business decision/choice, and thus the pricing for it is constrained by competition.

Contrary to SIFMA's argument, there is competition for connectivity to MIAX and its affiliates. MIAX competes with nine (9) non-Members who resell MIAX connectivity. Those non-Members resell that connectivity to multiple market participants over that same connection, including both Members and non-Members of MIAX (typically extranets and service bureaus). When connectivity is re-sold by a third-party, MIAX does not receive any connectivity revenue from that sale. It is entirely between the third-party and the purchaser, thus constraining the ability of MIAX to set its connectivity pricing as indirect connectivity is a substitute for direct connectivity. There are currently nine (9) non-Members that purchase connectivity to MIAX

²⁶ See the MIAX Connectivity Guide at https://www.miaxoptions.com/sites/default/files/page-files/MIAX_Connectivity_Guide_v3.6_01142019.pdf.

and/or MIAX PEARL. Those non-Members resell that connectivity to eleven (11) customers, some of whom are agency broker-dealers that have tens of customers of their own. Some of those eleven (11) customers also purchase connectivity directly from MIAX and/or MIAX PEARL. Accordingly, indirect connectivity is a viable alternative that is already being used by non-Members of MIAX, constraining the price that MIAX is able to charge for connectivity to its Exchange.

The Exchange²⁷ and MIAX PEARL²⁸ are comprised of 41 distinct Members between the two exchanges, excluding any additional affiliates of such Members that are also Members of MIAX, MIAX PEARL, or both. Of those 41 distinct Members, 33 Members have purchased the 1Gb, 10Gb, 10Gb ULL connections or some combination of multiple various connections. Furthermore, every Member who has purchased at least one connection also trades on the Exchange, MIAX PEARL, or both, with the exception of one new Member who is currently in the on-boarding process. The 8 remaining Members who have not purchased any connectivity to the Exchange are still able to trade on the Exchange indirectly through other Members or non-Member service bureaus that are connected. These 8 Members who have not purchased connectivity are not forced or compelled to purchase connectivity, and they retain all of the other benefits of Membership with the Exchange. Accordingly, Members have the choice to purchase connectivity and are not compelled to do so in any way.

²⁷ The Exchange has 38 distinct Members, excluding affiliated entities. See MIAX Exchange Member Directory, available at <https://www.miaxoptions.com/exchange-members>.

²⁸ MIAX PEARL has 36 distinct Members, excluding affiliated entities. See MIAX PEARL Exchange Member Directory, available at <https://www.miaxoptions.com/exchange-members/pearl>.

The Exchange believes that the Proposed Fee Changes are fair, equitable and not unreasonably discriminatory because the connectivity pricing is associated with relative usage of the various market participants and does not impose a barrier to entry to smaller participants. Accordingly, the Exchange offers three direct connectivity alternatives and various indirect connectivity (via third-party) alternatives, as described above. MIAX recognizes that there are various business models and varying sizes of market participants conducting business on the Exchange. The 1Gb direct connectivity alternative is 1/10th the size of the 10Gb direct connectivity alternative. Approximately just less than half of MIAX and MIAX PEARL Members that connect (14 out of 33) purchase 1Gb connections. The 1Gb direct connection can support the sending of orders and the consumption of all market data feed products, other than the top-of-market data feed product or depth data feed product (which require a 10Gb connection). The 1Gb direct connection is generally purchased by market participants that utilize less bandwidth. The market participants that purchase 10Gb ULL direct connections utilize the most bandwidth, and those are the participants that consume the most resources from the network. Accordingly, the Exchange believes the allocation of the Proposed Fee Increases (\$9,300 for a 10Gb ULL connection versus \$1,400 for a 1Gb connection) are reasonable based on the network resources consumed by the market participants – lowest bandwidth consuming members pay the least, and highest bandwidth consuming members pay the most, particularly since higher bandwidth consumption translates to higher costs to the Exchange. The 10Gb ULL connection offers optimized connectivity for latency sensitive participants and is approximately single digit microseconds faster in round trip time for connection oriented traffic to the Exchange than the 10Gb connection. This lower latency is achieved through more advanced network equipment, such as advanced hardware and switching components, which translates to increased

costs to the Exchange. Market participants that are less latency sensitive can purchase 10Gb direct connections and quote in all products on the Exchange and consume all market data feeds, and such 10Gb direct connections are priced lower than the 10Gb ULL direct connections, offering smaller sized market makers a lower cost alternative.

With respect to options trading, the Exchange had only 4.39% market share of the U.S. options industry in 2018 in Equity/ETF classes according to the OCC.²⁹ For all of 2018, the Exchange's affiliate, MIAX PEARL, had only 4.82% market share of the U.S. options industry in Equity/ETF classes according to the OCC.³⁰ The Exchange is not aware of any evidence that a combined market share of less than 10% provides the Exchange with anti-competitive pricing power. This, in addition to the fact that not all broker-dealers are required to connect to all options exchanges, supports the Exchange's conclusion that its pricing is constrained by competition.

Separately, the Exchange is not aware of any reason why market participants could not simply drop their connections and cease being Members of the Exchange if the Exchange were to establish unreasonable and uncompetitive price increases for its connectivity alternatives. Market participants choose to connect to a particular exchange and because it is a choice, MIAX must set reasonable connectivity pricing, otherwise prospective members would not connect and existing members would disconnect or connect through a third-party reseller of connectivity. No options market participant is required by rule, regulation, or competitive forces to be a Member of the Exchange. Several market participants choose not to be Members of the Exchange and

²⁹ See Exchange Market Share of Equity Products – 2018, The Options Clearing Corporation, available at <https://www.theocc.com/webapps/exchange-volume>.

³⁰ Id.

choose not to access the Exchange, and several market participants also access the Exchange indirectly through another market participant. To illustrate, the Exchange has only 45 Members (including all such Members' affiliate Members). However, Cboe Exchange, Inc. ("Cboe") has over 200 members,³¹ Nasdaq ISE, LLC has approximately 100 members,³² and NYSE American LLC has over 80 members.³³ If all market participants were required to be Members of the Exchange and connect directly to the Exchange, the Exchange would have over 200 Members, in line with Cboe's total membership. But it does not. The Exchange only has 45 Members (inclusive of Members' affiliates).

The Exchange finds it compelling that all of the Exchange's existing Members continued to purchase the Exchange's connectivity services during the period for which the Proposed Fee Increases took effect in August 2018. In particular, the Exchange believes that the Proposed Fee Increases are reasonable because the Exchange did not lose any Members (or the number of connections each Member purchased) or non-Member connections due to the Exchange increasing its connectivity fees through the First Proposed Rule Change, which fee increase became effective August 1, 2018. For example, in July 2018, fourteen (14) Members purchased 1Gb connections, ten (10) Members purchased 10Gb connections, and fifteen (15) Members purchased 10Gb ULL connections. (The Exchange notes that 1Gb connections are purchased

³¹ See Form 1/A, filed August 30, 2018 (<https://www.sec.gov/Archives/edgar/vpr/1800/18002831.pdf>); Form 1/A, filed August 30, 2018 (<https://www.sec.gov/Archives/edgar/vpr/1800/18002833.pdf>); Form 1/A, filed July 24, 2018 (<https://www.sec.gov/Archives/edgar/vpr/1800/18002781.pdf>); Form 1/A, filed August 30, 2018 (<https://www.sec.gov/Archives/edgar/data/1473845/999999999718007832/9999999997-18-007832-index.htm>).

³² See Form 1/A, filed July 1, 2016 (<https://www.sec.gov/Archives/edgar/vpr/1601/16019243.pdf>).

³³ See <https://www.nyse.com/markets/american-options/membership#directory>.

primarily by EEM Members; 10Gb ULL connections are purchased primarily by higher volume Market Makers quoting all products across both MIAX and MIAX PEARL and targeting mid-market resting orders; and 10Gb connections are purchased by higher volume EEMs and lower volume Market Makers.) The vast majority of those Members purchased multiple such connections with the actual number of connections depending on the Member's throughput requirements based on the volume of their quote/order traffic and market data needs associated with their business model. After the fee increase, beginning August 1, 2018, the same number of Members purchased the same number of connections.³⁴ Furthermore, the total number of connections did not decrease from July to August 2018, and in fact one Member even purchased two (2) additional 10Gb ULL connections in August 2018, after the fee increase.

Also, in July 2018, four (4) non-Members purchased 1Gb connections, two (2) non-Members purchased 10Gb connections, and one (1) non-Member purchased 10Gb ULL connections. After the fee increase, beginning August 1, 2018, the same non-Members purchased the same number of connections across all available alternatives and two (2) additional non-Members purchased three (3) more connections after the fee increase. These non-Members freely purchased their connectivity with the Exchange in order to offer trading services to other firms and customers, as well as access to the market data services that their connections to the Exchange provide them, but they are not required or compelled to purchase any of the Exchange's connectivity options. MIAX did not experience any noticeable change (increase or decrease) in order flow sent by its market participants as a result of the fee increase.

³⁴ The Exchange notes that one Member downgraded one connection in July of 2018, however such downgrade was done well ahead of notice of the Proposed Fee Increase and was the result of a change to the Member's business operation that was completely independent of, and unrelated to, the Proposed Fee Increases.

Of those Members and non-Members that bought multiple connections, no firm dropped any connections beginning August 1, 2018, when the Exchange increased its fees. Nor did the Exchange lose any Members. Furthermore, the Exchange did not receive any comment letters or official complaints from any Member or non-Member purchaser of connectivity regarding the increased fees regarding how the fee increase was unreasonable, unduly burdensome, or would negatively impact their competitiveness amongst other market participants. These facts, coupled with the discussion above, showing that it is not necessary to join and/or connect to all options exchanges, demonstrate that the Exchange's fees are constrained by competition and are reasonable and not contrary to the Law of Demand as SIFMA suggests. Therefore, the Exchange believes that the Proposed Fee Increases are fair, equitable, and non-discriminatory, as the fees are competitive.

The Exchange believes that the Proposed Fee Increases are equitably allocated among Members and non-Members, as evidenced by the fact that the fee increases are allocated across all connectivity alternatives, and there is not a disproportionate number of Members purchasing any alternative -- fourteen (14) Members purchased 1Gb connections, ten (10) Members purchased 10Gb connections, fifteen (15) Members purchased 10Gb ULL connections, four (4) non-Members purchased 1Gb connections, two (2) non-Members purchased 10Gb connections, and one (1) non-Member purchased 10Gb ULL connections. The Exchange recognizes that the relative fee increases are 27% for the 1Gb connection, 10.9% for the 10Gb connection, and 9.4% for the 10Gb ULL connection, but the Exchange believes that percentage increase differentiation is appropriate, given the different levels of service provided and the largest percentage increase being associated with the lowest cost connection. Further, the Exchange believes that the fees are reasonably allocated as the users of the higher bandwidth connections consume the most

resources of the Exchange's network. It is these firms that account that also account for the vast majority of the Exchange's trading volume. The purchasers of the 10Gb ULL connectivity account for approximately 75% of the volume on the Exchange. For example, in April of 2019, to date, 11 million contracts of the 14 million contracts executed were done by the top market making firms on the Exchange in simple (non-complex) volume. The Exchange considered whether to increase transaction fees and other fees in order to offset its costs as an alternative to increasing connectivity fees, however, the Exchange determined that increasing its connectivity fees was the only viable alternative. This is because the increased costs are more closely associated with connectivity, as well as the intense level of competition among the options exchanges for order flow through transaction fees.

Second, the Exchange believes that its proposal is consistent with Section 6(b)(4) of the Act because the Proposed Fee Increases allow the Exchange to recover a portion (less than all) of the increased costs incurred by the Exchange associated with providing and maintaining the necessary hardware and other network infrastructure to support this technology since it last filed to increase its connectivity fees in December 2016, which became effective on January 1, 2017.³⁵ Put simply, the costs of the Exchange to provide these services have increased considerably over this time, as more fully-detailed and quantified below. The Exchange believes that it is reasonable and appropriate to increase its fees charged for use of its connectivity to partially offset the increased costs the Exchange incurred during this time associated with maintaining and enhancing a state-of-the-art exchange network infrastructure in the U.S. options industry.

³⁵ See Securities Exchange Act Release No. 79666 (December 22, 2016), 81 FR 96133 (December 29, 2016) (SR-MIAX-2016-47) (Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Its Fee Schedule To Modify the Exchange's Connectivity Fees).

In particular, the Exchange's increased costs associated with supporting its network are due to several factors, including increased costs associated with maintaining and expanding a team of highly-skilled network engineers (the Exchange also hired additional network engineering staff in 2017 and 2018), increasing fees charged by the Exchange's third-party data center operator, and costs associated with projects and initiatives designed to improve overall network performance and stability, through the Exchange's research and development ("R&D") efforts.

In order to provide more detail and to quantify the Exchange's increased costs, the Exchange notes that increased costs are associated with the infrastructure and increased headcount to fully-support the advances in infrastructure and expansion of network level services, including customer monitoring, alerting and reporting. Additional technology expenses were incurred related to the expanding its Information Security services, enhanced network monitoring and customer reporting, as well as Regulation SCI mandated processes associated with network technology. All of these additional expenses have been incurred by the Exchange since it last increased its connectivity fees on January 1, 2017.

Additionally, while some of the expense is fixed, much of the expense is not fixed, and thus increases as the number of connections increase. For example, new 1Gb, 10Gb, and 10Gb ULL connections require the purchase of additional hardware to support those connections as well as enhanced monitoring and reporting of customer performance that MIAX and its affiliates provide. And 10Gb ULL connections require the purchase of specialized, more costly hardware. Further, as the total number of all connections increase, MIAX and its affiliates need to increase their data center footprint and consume more power, resulting in increased costs charged by their third-party data center provider. Accordingly, cost to MIAX and its affiliates is not entirely

fixed. Just the initial fixed cost buildout of the network infrastructure of MIAX and its affiliates, including both primary/secondary sites and disaster recovery, was over \$30 million. The current annual operational expense (which relates 100% to the network infrastructure, associated data center processing equipment required to support various connections, network monitoring systems and associated software required to support the various forms of connectivity) is approximately \$8.5 million. This does not include additional indirect expenses that the Exchange incurs that are allocated to the support of network infrastructure of the Exchange. These costs have increased over 10% since the last time the Exchange increased its connectivity fees on January 1, 2017. As these operational expenses increase, MIAX and its affiliates look to offset those costs through increased connectivity fees.

A more detailed breakdown of the operational expense increases include an approximate 70% increase in technology-related personnel costs in infrastructure, due to expansion of services/support (increase of approximately \$800,000); an approximate 10% increase in datacenter costs due to price increases and footprint expansion (increase of approximately \$500,000); an approximate 5% increase in vendor-supplied dark fiber due to price increases and expanded capabilities (increase of approximately \$25,000); and a 30% increase in market data connectivity fees (increase of approximately \$200,000). Of note, regarding market data connectivity fee increased cost, this is the cost associated with MIAX consuming connectivity/content from the equities markets in order to operate the Exchange, causing MIAX to effectively pay its competitors for this connectivity.

The Exchange also incurred additional significant capital expenditures over this same period to upgrade and enhance the underlying technology components, as more fully-detailed below.

Further, because the costs of operating a data center are significant and not economically feasible for the Exchange, the Exchange does not operate its own data centers, and instead contracts with a third-party data center provider. The Exchange notes that larger, dominant exchange operators own/operate their data centers, which offers them greater control over their data center costs. Because those exchanges own and operate their data centers as profit centers, the Exchange is subject to additional costs. As a result, the Exchange is subject to fee increases from its data center provider, which the Exchange experienced in 2017 and 2018 of approximately 10%, as cited above. Connectivity fees, which are charged for accessing the Exchange's data center network infrastructure, are directly related to the network and offset such costs.

Further, the Exchange invests significant resources in network R&D, which are not included in direct operational expenses to improve the overall performance and stability of its network. For example, the Exchange has a number of network monitoring tools (some of which were developed in-house, and some of which are licensed from third-parties), that continually monitor, detect, and report network performance, many of which serve as significant value-adds to the Exchange's Members and enable the Exchange to provide a high level of customer service. These tools detect and report performance issues, and thus enable the Exchange to proactively notify a Member (and the SIPs) when the Exchange detects a problem with a Member's connectivity. The costs associated with the maintenance and

improvement of existing tools and the development of new tools resulted in significant increased cost to the Exchange since January 1, 2017.

Certain recently developed network aggregation and monitoring tools provide the Exchange with the ability to measure network traffic with a much more granular level of variability. This is important as Exchange Members demand a higher level of network determinism and the ability to measure variability in terms of single digit nanoseconds. Also, the Exchange routinely conducts R&D projects to improve the performance of the network's hardware infrastructure. As an example, in the last year, the Exchange's R&D efforts resulted in a performance improvement, requiring the purchase of new equipment to support that improvement, and thus resulting in increased costs in the hundreds of thousands of dollars range. In sum, the costs associated with maintaining and enhancing a state-of-the-art exchange network infrastructure in the U.S. options industry is a significant expense for the Exchange that continues to increase, and thus the Exchange believes that it is reasonable to offset a portion of those increased costs by increasing its network connectivity fees, as proposed herein. The Exchange invests in and offers a superior network infrastructure as part of its overall options exchange services offering, resulting in significant costs associated with maintaining this network infrastructure, which are directly tied to the amount of the connectivity fees that must be charged to access it, in order to recover those costs.

The Exchange notes that other exchanges have similar connectivity alternatives for their participants, including similar low-latency connectivity. For example, Nasdaq PHLX LLC ("Phlx"), NYSE Arca, Inc. ("Arca"), NYSE American LLC ("NYSE American") and Nasdaq ISE, LLC ("ISE") all offer a 1Gb, 10Gb and 10Gb low latency ethernet connectivity

alternatives to each of their participants.³⁶ The Exchange further notes that Phlx, ISE, Arca and NYSE American each charge higher rates for such similar connectivity to primary and secondary facilities.³⁷ While MIAX's proposed connectivity fees are substantially lower than the fees charged by Phlx, ISE, Arca and NYSE American, MIAX believes that it offers significant value to Members over other exchanges in terms of network monitoring and reporting, which MIAX believes is a competitive advantage, and differentiates its connectivity versus connectivity to other exchanges. Additionally, the Exchange's proposed connectivity fees to its disaster recovery facility are within the range of the fees charged by other exchanges for similar connectivity alternatives.³⁸

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

MIAX does not believe that the proposed rule changes will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. In particular, the Exchange has received no official complaints from Members or others who connect to it that its fees or the Proposed Fee Increases are negatively impacting or would negatively impact their abilities to compete with other market participants. Further, the Exchange is unaware of any

³⁶ See Phlx and ISE Rules, General Equity and Options Rules, General 8, Section 1(b). Phlx and ISE each charge a monthly fee of \$2,500 for each 1Gb connection, \$10,000 for each 10Gb connection and \$15,000 for each 10Gb Ultra connection, which the equivalent of the Exchange's 10Gb ULL connection. See also NYSE American Fee Schedule, Section V.B, and Arca Fees and Charges, Co-Location Fees. NYSE American and Arca each charge a monthly fee of \$5,000 for each 1Gb circuit, \$14,000 for each 10Gb circuit and \$22,000 for each 10Gb LX circuit, which the equivalent of the Exchange's 10Gb ULL connection.

³⁷ Id.

³⁸ See Nasdaq ISE, Options Rules, Options 7, Pricing Schedule, Section 11.D. (charging \$3,000 for disaster recovery testing & relocation services); see also Cboe Exchange, Inc. ("Cboe") Fees Schedule, p. 14, Cboe Command Connectivity Charges (charging a monthly fee of \$2,000 for a 1Gb disaster recovery network access port and a monthly fee of \$6,000 for a 10Gb disaster recovery network access port).

assertion that its existing fee levels or the Proposed Fee Increases would somehow unduly impair its competition with other options exchanges. To the contrary, if the fees charged are deemed too high by market participants, they can simply disconnect.

While the Exchange recognizes the distinction between connecting to an exchange and trading at the exchange, the Exchange notes that it operates in a highly competitive options market in which market participants can readily connect and trade with venues they desire. In such an environment, the Exchange must continually adjust its fees to remain competitive with other exchanges. The Exchange believes that the proposed changes reflect this competitive environment.

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)**

Pursuant to Section 19(b)(3)(A)(ii) of the Act, and Rule 19b-4(f)(2) thereunder the Exchange has designated this proposal as establishing or changing a due, fee, or other charge imposed on any person, whether or not the person is a member of the self-regulatory organization, which renders the proposed rule change effective upon filing.

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

The proposed rule change is not specifically based upon the rules of any other exchange; provided, however, that the Exchange notes that, as applicable, Phlx, ISE, Arca, and NYSE

American all offer similar connectivity alternatives as that proposed by the Exchange with fees within the range of, or higher, than the fees proposed to be charged by the Exchange.³⁹

Additionally, the connectivity fees for the disaster recovery facilities of other exchanges are within the range of the fees proposed by the Exchange.⁴⁰

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 for publication in the Federal Register.

5. Applicable section of the MIAX Fee Schedule.

³⁹ See supra note 36.

⁴⁰ See supra note 38.

EXHIBIT 1

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34- ; File No. SR-MIAX-2019-23)

April__, 2019

Self-Regulatory Organizations: Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by Miami International Securities Exchange LLC to Amend Its Fee Schedule

Pursuant to the provisions of Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)¹ and Rule 19b-4 thereunder,² notice is hereby given that on April 29, 2019, Miami International Securities Exchange LLC (“MIAX Options” or “Exchange”) filed with the Securities and Exchange Commission (“Commission”) a 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 is filing a proposal to amend the MIAX Options Fee Schedule (the “Fee Schedule”) to modify certain of the Exchange’s system connectivity fees.

The Exchange initially filed the proposal on March 1, 2019 (SR-MIAX-2019-10). That filing has been withdrawn and replaced with the current filing (SR-MIAX-2019-23).

The text of the proposed rule change is available on the Exchange’s website at <http://www.miaxoptions.com/rule-filings>, at MIAX’s principal office, and at the Commission’s Public Reference Room.

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

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 Exchange proposes to amend the Fee Schedule regarding connectivity to the Exchange. Specifically, the Exchange proposes to amend Sections 5a) and b) of the Fee Schedule to increase the network connectivity fees for the 1 Gigabit (“Gb”) fiber connection, the 10Gb fiber connection, and the 10Gb ultra-low latency (“ULL”) fiber connection, which are charged to both Members³ and non-Members of the Exchange for connectivity to the Exchange’s primary/secondary facility. The Exchange also proposes to increase the network connectivity fees for the 1Gb and 10Gb fiber connections for connectivity to the Exchange’s disaster recovery facility. Each of these connections are shared connections, and thus can be utilized to access both the Exchange and the Exchange’s affiliate, MIAX PEARL, LLC (“MIAX PEARL”). These proposed fee increases are collectively referred to herein as the “Proposed Fee Increases.”

³ The term “Member” means an individual or organization approved to exercise the trading rights associated with a Trading Permit. Members are deemed “members” under the Exchange Act. See Exchange Rule 100.

The Exchange initially filed the Proposed Fee Increases on July 31, 2018, designating the Proposed Fee Increases effective August 1, 2018.⁴ The First Proposed Rule Change was published for comment in the Federal Register on August 13, 2018.⁵ The Commission received one comment letter on the proposal.⁶ The Proposed Fee Increases remained in effect until they were temporarily suspended pursuant to a suspension order (the “Suspension Order”) issued by the Commission on September 17, 2018.⁷ The Suspension Order also instituted proceedings to determine whether to approve or disapprove the First Proposed Rule Change.⁸

The Healthy Markets Letter argued that the Exchange did not provide sufficient information in its filing to support a finding that the proposal is consistent with the Act. Specifically, the Healthy Markets Letter objected to the Exchange’s reliance on the fees of other exchanges to demonstrate that its fee increases are consistent with the Act. In addition, the Healthy Markets Letter argued that the Exchange did not offer any details to support its basis for asserting that the proposed fee increases are consistent with the Act.

On October 5, 2018, the Exchange withdrew the First Proposed Rule Change.⁹ The Exchange refiled the Proposed Fee Increases on September 18, 2018, designating the Proposed

⁴ See Securities Exchange Act Release No. 83786 (August 7, 2018), 83 FR 40106 (August 13, 2018)(SR-MIAX-2018-19) (the “First Proposed Rule Change”).

⁵ Id.

⁶ See Letter from Tyler Gellasch, Executive Director, The Healthy Markets Association (“Healthy Markets”), to Brent J. Fields, Secretary, Commission, dated September 4, 2018 (“Healthy Markets Letter”).

⁷ See Securities Exchange Act Release No. 34-84175 (September 17, 2018), 83 FR 47955 (September 21, 2018)(SR-MIAX-2018-19) (Suspension of and Order Instituting Proceedings To Determine Whether To Approve or Disapprove a Proposed Rule Change To Amend the Fee Schedule Regarding Connectivity Fees for Members and Non-Members).

⁸ Id.

⁹ See Securities Exchange Act Release No. 84398 (October 10, 2018), 83 FR 52264 (October 16, 2018)(SR-MIAX-2018-19 (Notice of Withdrawal of a Proposed Rule

Fee Increases immediately effective.¹⁰ The Second Proposed Rule Change was published for comment in the Federal Register on October 10, 2018.¹¹ The Commission received one comment letter on the proposal.¹² The Proposed Fee Increases remained in effect until they were temporarily suspended pursuant to a suspension order (the “Second Suspension Order”) issued by the Commission on October 3, 2018.¹³ The Second Suspension Order also instituted proceedings to determine whether to approve or disapprove the Second Proposed Rule Change.¹⁴

The SIFMA Letter argued that the Exchange did not provide sufficient information in its filing to support a finding that the proposal should be approved by the Commission after further review of the proposed fee increases. Specifically, the SIFMA Letter objected to the Exchange’s reliance on the fees of other exchanges to justify its own fee increases. In addition, the SIFMA Letter argued that the Exchange did not offer any details to support its basis for asserting that the proposed fee increases are reasonable. On November 23, 2018, the Exchange withdrew the Second Proposed Rule Change.¹⁵

Change To Amend the Fee Schedule Regarding Connectivity Fees for Members and Non-Members).

¹⁰ See Securities Exchange Act Release No. 84357 (October 3, 2018), 83 FR 50976 (October 10, 2018)(SR-MIAX-2018-25) (the “Second Proposed Rule Change”) (Notice of Filing of a Proposed Rule Change To Amend the Fee Schedule Regarding Connectivity Fees for Members and Non-Members; Suspension of and Order Instituting Proceedings To Determine Whether To Approve or Disapprove the Proposed Rule Change).

¹¹ Id.

¹² See Letter from Theodore R. Lazo, Managing Director and Associate General Counsel, and Ellen Greene, Managing Director Financial Services Operations, The Securities Industry and Financial Markets Association (“SIFMA”), to Brent J. Fields, Secretary, Commission, dated October 15, 2018 (“SIFMA Letter”).

¹³ See supra note 10.

¹⁴ Id.

¹⁵ See Securities Exchange Act Release No. 84650 (November 26, 2018), 83 FR 61705 (November 30, 2018)(SR-MIAX-2018-25) (Notice of Withdrawal of a Proposed Rule

The Exchange refiled the Proposed Fee Increases on March 1, 2019, designating the Proposed Fee Increases immediately effective.¹⁶ The Third Proposed Rule Change was published for comment in the Federal Register on March 20, 2019.¹⁷ The Third Proposed Rule Change provided new information, including additional detail about the market participants impacted by the Proposed Fee Increases, as well as the additional costs incurred by the Exchange associated with providing the connectivity alternatives, in order to provide more transparency and support relating to the Exchange's belief that the Proposed Fee Increases are reasonable, equitable, and non-discriminatory, and to provide sufficient information for the Commission to determine that the Proposed Fee Increases are consistent with the Act.

On March 29, 2019, the Commission issued its Order Disapproving Proposed Rule Changes to Amend the Fee Schedule on the BOX Market LLC Options Facility to Establish BOX Connectivity Fees for Participants and Non-Participants Who Connect to the BOX Network (the "BOX Order").¹⁸ In the BOX Order, the Commission highlighted a number of deficiencies it found in three separate rule filings by BOX Exchange LLC ("BOX") to increase BOX's connectivity fees that prevented the Commission from finding that BOX's proposed connectivity fees were consistent with the Act. These deficiencies relate to topics that the Commission believes should be discussed in a connectivity fee filing.

Change To Amend the Fee Schedule Regarding Connectivity Fees for Members and Non-Members.).

¹⁶ See Securities Exchange Act Release No. 85318 (March 14, 2019), 84 FR 10363 (March 20, 2019)(SR-MIAX-2019-10) (the "Third Proposed Rule Change") (Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Its Fee Schedule).

¹⁷ Id.

¹⁸ See Securities Exchange Act Release No. 85459 (March 29, 2019), 84 FR 13363 (April 4, 2019)(SR-BOX-2018-24, SR-BOX-2018-37, and SR-BOX-2019-04).

After the BOX Order was issued, the Commission received four comment letters on the Third Proposed Rule Change.¹⁹

The Second SIFMA Letter argued that the Exchange did not provide sufficient information in its Third Proposed Rule Change to support a finding that the proposal should be approved by the Commission after further review of the proposed fee increases. Specifically, the Second SIFMA Letter argued that the Exchange's market data fees and connectivity fees were not constrained by competitive forces, the Exchange's filing lacked sufficient information regarding cost and competition, and that the Commission should establish a framework for determining whether fees for exchange products and services are reasonable when those products and services are not constrained by significant competitive forces.

The IEX Letter argued that the Exchange did not provide sufficient information in its Third Proposed Rule Change to support a finding that the proposal should be approved by the Commission and that the Commission should extend the time for public comment on the Third Proposed Rule Change. Despite the objection to the Proposed Fee Increases, the IEX Letter did find that "MIAX has provided more transparency and analysis in these filings than other exchanges have sought to do for their own fee increases."²⁰ The IEX Letter specifically argued that the Proposed Fee Increases were not constrained by competition, the Exchange should provide data on the Exchange's actual costs and how those costs relate to the product or service

¹⁹ See Letter from Joseph W. Ferraro III, SVP & Deputy General Counsel, MIAX, to Vanessa Countryman, Acting Secretary, Commission, dated April 5, 2019 ("MIAX Letter"); Letter from Theodore R. Lazo, Managing Director and Associate General Counsel, SIFMA, to Vanessa Countryman, Acting Secretary, Commission, dated April 10, 2019 ("Second SIFMA Letter"); Letter from John Ramsay, Chief Market Policy Officer, Investors Exchange LLC, to Vanessa Countryman, Acting Secretary, Commission, dated April 10, 2019 ("IEX Letter"); and Letter from Tyler Gellasch, Executive Director, Healthy Markets, to Brent J. Fields, Secretary, Commission, dated April 18, 2019 ("Second Healthy Markets Letter").

²⁰ See IEX Letter, pg. 1.

in question, and whether and how MIAX considered changes to transaction fees as an alternative to offsetting exchange costs.

The Second Healthy Markets Letter did not object to the Third Proposed Rule Change and the information provided by the Exchange in support of the Proposed Fee Increases. Specifically, the Second Healthy Markets Letter stated that the Third Proposed Rule Change was “remarkably different,” and went on to further state as follows:

The instant MIAX filings -- along with their April 5th supplement -- provide much greater detail regarding users of connectivity, the market for connectivity, and costs than the Initial MIAX Filings. They also appear to address many of the issues raised by the Commission staff’s BOX disapproval order. This third round of MIAX filings suggests that MIAX is operating in good faith to provide what the Commission and staff seek.²¹

On April 29, 2019, the Exchange withdrew the Third Proposed Rule Change.²² The Exchange is now re-filing the Proposed Fee Increases to squarely and comprehensively address each and every topic raised for discussion in the BOX Order, the IEX Letter and the Second SIFMA Letter to ensure that the Proposed Fee Increases are reasonable, equitable, and non-discriminatory, and that the Commission should find that the Proposed Fee Increases are consistent with the Act. The proposed rule change is immediately effective upon filing with the Commission pursuant to Section 19(b)(3)(A) of the Act.

The Exchange currently offers various bandwidth alternatives for connectivity to the Exchange, to its primary and secondary facilities, consisting of a 1Gb fiber connection, a 10Gb fiber connection, and a 10Gb ULL fiber connection. The 10Gb ULL offering uses an ultra-low latency switch, which provides faster processing of messages sent to it in comparison to the switch used for the other types of connectivity. The Exchange currently assesses the following monthly network connectivity fees to both Members and non-Members for connectivity to the

²¹ See Second Healthy Markets Letter, pg. 2.

²² See SR-MIAX-2019-10).

Exchange's primary/secondary facility: (a) \$1,100 for the 1Gb connection; (b) \$5,500 for the 10Gb connection; and (c) \$8,500 for the 10Gb ULL connection. The Exchange also assesses to both Members and non-Members a monthly per connection network connectivity fee of \$500 for each 1Gb connection to the disaster recovery facility and a monthly per connection network connectivity fee of \$2,500 for each 10Gb connection to the disaster recovery facility.

The Exchange's MIAX Express Network Interconnect ("MENI") can be configured to provide Members and non-Members of the Exchange network connectivity to the trading platforms, market data systems, test systems, and disaster recovery facilities of both the Exchange and its affiliate, MIAX PEARL, via a single, shared connection. Members and non-Members utilizing the MENI to connect to the trading platforms, market data systems, test systems and disaster recovery facilities of the Exchange and MIAX PEARL via a single, shared connection are assessed only one monthly network connectivity fee per connection, regardless of the trading platforms, market data systems, test systems, and disaster recovery facilities accessed via such connection.

The Exchange proposes to increase the monthly network connectivity fees for such connections for both Members and non-Members. The network connectivity fees for connectivity to the Exchange's primary/secondary facility will be increased as follows: (a) from \$1,100 to \$1,400 for the 1Gb connection; (b) from \$5,500 to \$6,100 for the 10Gb connection; and (c) from \$8,500 to \$9,300 for the 10Gb ULL connection. The network connectivity fees for connectivity to the Exchange's disaster recovery facility will be increased as follows: (a) from \$500 to \$550 for the 1Gb connection; and (b) from \$2,500 to \$2,750 for the 10Gb connection.

2. Statutory Basis

The Exchange believes that its proposal to amend its Fee Schedule is consistent with Section 6(b) of the Act²³ in general, and furthers the objectives of Section 6(b)(4) of the Act²⁴ in particular, in that it provides for the equitable allocation of reasonable dues, fees and other charges among Exchange Members and issuers and other persons using any facility or system which the Exchange operates or controls. The Exchange also believes the proposal furthers the objectives of Section 6(b)(5) of the Act²⁵ in that it is designed to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general to protect investors and the public interest and is not designed to permit unfair discrimination between customer, issuers, brokers and dealers.

First, the Exchange believes that its proposal is consistent with Section 6(b)(4) of the Act, in that the Proposed Fee Changes are fair, equitable and not unreasonably discriminatory, because the fees for the connectivity alternatives available on the Exchange, as proposed to be increased, are competitive and market-driven. The U.S. options markets are highly competitive (there are currently 16 options markets) and a reliance on competitive markets is an appropriate means to ensure equitable and reasonable prices.

The Exchange acknowledges that there is no regulatory requirement that any market participant connect to the Exchange, or that any participant connect at any specific connection speed. The rule structure for options exchanges are, in fact, fundamentally different from those of equities exchanges. In particular, options market participants are not forced to connect to (and

²³ 15 U.S.C. 78f(b).

²⁴ 15 U.S.C. 78f(b)(4).

²⁵ 15 U.S.C. 78f(b)(5).

purchase market data from) all options exchanges, as shown by the number of Members of MIAX as compared to the much greater number of members at other options exchanges (as further detailed below). Not only does MIAX have less than half the number of members as certain other options exchanges, but there are also a number of the Exchange's Members that do not connect directly to MIAX. Further, of the number of Members that connect directly to MIAX, many such Members do not purchase market data from MIAX. There are a number of large market makers and broker-dealers that are members of other options exchange but not Members of MIAX. For example, the following are not Members of MIAX: The D. E. Shaw Group, CTC, XR Trading LLC, Hardcastle Trading AG, Ronin Capital LLC, Belvedere Trading, LLC, Bluefin Trading, and HAP Capital LLC. In addition, of the market makers that are connected to MIAX, it is the individual needs of the market maker that require whether they need one connection or multiple connections to the Exchange. The Exchange has market maker Members that only purchase one connection (10Gb or 10Gb ULL) and the Exchange has market maker Members that purchase multiple connections. It is all driven by the business needs of the market maker. Market makers that are consolidators that target resting order flow tend to purchase more connectivity than market makers that simply quote all symbols on the Exchange. Even though non-Members purchase and resell 10Gb and 10Gb ULL connections to both Members and non-Members, no market makers currently connect to the Exchange indirectly through such resellers.

SIFMA's argument that all broker-dealers are required to connect to all exchanges is not true in the options markets. The options markets have evolved differently than the equities markets both in terms of market structure and functionality. For example, there are many order types that are available in the equities markets that are not utilized in the options markets, which relate to mid-point pricing and pegged pricing which require connection to the SIPs and each of

the equities exchanges in order to properly execute those orders in compliance with best execution obligations. In addition, in the options markets there is a single SIP (OPRA) versus two SIPs in the equities markets, resulting in few hops and thus alleviating the need to connect directly to all the options exchanges. Additionally, in the options markets, the linkage routing and trade through protection are handled by the exchanges, not by the individual members. Thus not connecting to an options exchange or disconnecting from an options exchange does not potentially subject a broker-dealer to violate order protection requirements as suggested by SIFMA. Gone are the days when the retail brokerage firms (the Fidelity's, the Schwab's, the eTrade's) were members of the options exchanges – they are not members of MIAX or its affiliates, MIAX PEARL and MIAX Emerald, they do not purchase connectivity to MIAX, and they do not purchase market data from MIAX. The Exchange recognizes that the decision of whether to connect to the Exchange is separate and distinct from the decision of whether and how to trade on the Exchange. The Exchange acknowledges that many firms may choose to connect to the Exchange, but ultimately not trade on it, based on their particular business needs.

To assist prospective Members or firms considering connecting to MIAX, the Exchange provides information about the Exchange's available connectivity alternatives.²⁶ The decision of which type of connectivity to purchase, or whether to purchase connectivity at all for a particular exchange, is based on the business needs of the firm. For example, if the firm wants to receive the top-of-market data feed product or depth data feed product, due to the amount/size of data contained in those feeds, such firm would need to purchase either the 10Gb or 10Gb ULL connection. The 1Gb connection is too small to support those data feed products. MIAX notes that there are twelve (12) Members that only purchase the 1Gb connectivity alternative. Thus,

²⁶

See the MIAX Connectivity Guide at https://www.miaxoptions.com/sites/default/files/page-files/MIAX_Connectivity_Guide_v3.6_01142019.pdf.

while there is a meaningful percentage of purchasers of only 1Gb connections (12 of 33), by definition, those twelve (12) members purchase connectivity that cannot support the top-of-market data feed product or depth data feed product and thus they do not purchase such data feed products. Accordingly, purchasing market data is a business decision/choice, and thus the pricing for it is constrained by competition.

Contrary to SIFMA's argument, there is competition for connectivity to MIAX and its affiliates. MIAX competes with nine (9) non-Members who resell MIAX connectivity. Those non-Members resell that connectivity to multiple market participants over that same connection, including both Members and non-Members of MIAX (typically extranets and service bureaus). When connectivity is re-sold by a third-party, MIAX does not receive any connectivity revenue from that sale. It is entirely between the third-party and the purchaser, thus constraining the ability of MIAX to set its connectivity pricing as indirect connectivity is a substitute for direct connectivity. There are currently nine (9) non-Members that purchase connectivity to MIAX and/or MIAX PEARL. Those non-Members resell that connectivity to eleven (11) customers, some of whom are agency broker-dealers that have tens of customers of their own. Some of those eleven (11) customers also purchase connectivity directly from MIAX and/or MIAX PEARL. Accordingly, indirect connectivity is a viable alternative that is already being used by non-Members of MIAX, constraining the price that MIAX is able to charge for connectivity to its Exchange.

The Exchange²⁷ and MIAX PEARL²⁸ are comprised of 41 distinct Members between the two exchanges, excluding any additional affiliates of such Members that are also Members of

²⁷ The Exchange has 38 distinct Members, excluding affiliated entities. See MIAX Exchange Member Directory, available at <https://www.miaxoptions.com/exchange-members>.

MIAX, MIAX PEARL, or both. Of those 41 distinct Members, 33 Members have purchased the 1Gb, 10Gb, 10Gb ULL connections or some combination of multiple various connections. Furthermore, every Member who has purchased at least one connection also trades on the Exchange, MIAX PEARL, or both, with the exception of one new Member who is currently in the on-boarding process. The 8 remaining Members who have not purchased any connectivity to the Exchange are still able to trade on the Exchange indirectly through other Members or non-Member service bureaus that are connected. These 8 Members who have not purchased connectivity are not forced or compelled to purchase connectivity, and they retain all of the other benefits of Membership with the Exchange. Accordingly, Members have the choice to purchase connectivity and are not compelled to do so in any way.

The Exchange believes that the Proposed Fee Changes are fair, equitable and not unreasonably discriminatory because the connectivity pricing is associated with relative usage of the various market participants and does not impose a barrier to entry to smaller participants. Accordingly, the Exchange offers three direct connectivity alternatives and various indirect connectivity (via third-party) alternatives, as described above. MIAX recognizes that there are various business models and varying sizes of market participants conducting business on the Exchange. The 1Gb direct connectivity alternative is 1/10th the size of the 10Gb direct connectivity alternative. Approximately just less than half of MIAX and MIAX PEARL Members that connect (14 out of 33) purchase 1Gb connections. The 1Gb direct connection can support the sending of orders and the consumption of all market data feed products, other than the top-of-market data feed product or depth data feed product (which require a 10Gb connection). The 1Gb direct connection is generally purchased by market participants that

²⁸ MIAX PEARL has 36 distinct Members, excluding affiliated entities. See MIAX PEARL Exchange Member Directory, available at <https://www.miaxoptions.com/exchange-members/pearl>.

utilize less bandwidth. The market participants that purchase 10Gb ULL direct connections utilize the most bandwidth, and those are the participants that consume the most resources from the network. Accordingly, the Exchange believes the allocation of the Proposed Fee Increases (\$9,300 for a 10Gb ULL connection versus \$1,400 for a 1Gb connection) are reasonable based on the network resources consumed by the market participants – lowest bandwidth consuming members pay the least, and highest bandwidth consuming members pays the most, particularly since higher bandwidth consumption translates to higher costs to the Exchange. The 10Gb ULL connection offers optimized connectivity for latency sensitive participants and is approximately single digit microseconds faster in round trip time for connection oriented traffic to the Exchange than the 10Gb connection. This lower latency is achieved through more advanced network equipment, such as advanced hardware and switching components, which translates to increased costs to the Exchange. Market participants that are less latency sensitive can purchase 10Gb direct connections and quote in all products on the Exchange and consume all market data feeds, and such 10Gb direct connections are priced lower than the 10Gb ULL direct connections, offering smaller sized market makers a lower cost alternative.

With respect to options trading, the Exchange had only 4.39% market share of the U.S. options industry in 2018 in Equity/ETF classes according to the OCC.²⁹ For all of 2018, the Exchange's affiliate, MIAX PEARL, had only 4.82% market share of the U.S. options industry in Equity/ETF classes according to the OCC.³⁰ The Exchange is not aware of any evidence that a combined market share of less than 10% provides the Exchange with anti-competitive pricing power. This, in addition to the fact that not all broker-dealers are required to connect to all

²⁹ See Exchange Market Share of Equity Products – 2018, The Options Clearing Corporation, available at <https://www.theocc.com/webapps/exchange-volume>.

³⁰ Id.

options exchanges, supports the Exchange's conclusion that its pricing is constrained by competition.

Separately, the Exchange is not aware of any reason why market participants could not simply drop their connections and cease being Members of the Exchange if the Exchange were to establish unreasonable and uncompetitive price increases for its connectivity alternatives. Market participants choose to connect to a particular exchange and because it is a choice, MIAX must set reasonable connectivity pricing, otherwise prospective members would not connect and existing members would disconnect or connect through a third-party reseller of connectivity. No options market participant is required by rule, regulation, or competitive forces to be a Member of the Exchange. Several market participants choose not to be Members of the Exchange and choose not to access the Exchange, and several market participants also access the Exchange indirectly through another market participant. To illustrate, the Exchange has only 45 Members (including all such Members' affiliate Members). However, Cboe Exchange, Inc. ("Cboe") has over 200 members,³¹ Nasdaq ISE, LLC has approximately 100 members,³² and NYSE American LLC has over 80 members.³³ If all market participants were required to be Members of the Exchange and connect directly to the Exchange, the Exchange would have over 200 Members, in line with Cboe's total membership. But it does not. The Exchange only has 45 Members (inclusive of Members' affiliates).

³¹ See Form 1/A, filed August 30, 2018 (<https://www.sec.gov/Archives/edgar/vpr/1800/18002831.pdf>); Form 1/A, filed August 30, 2018 (<https://www.sec.gov/Archives/edgar/vpr/1800/18002833.pdf>); Form 1/A, filed July 24, 2018 (<https://www.sec.gov/Archives/edgar/vpr/1800/18002781.pdf>); Form 1/A, filed August 30, 2018 (<https://www.sec.gov/Archives/edgar/data/1473845/999999999718007832/9999999997-18-007832-index.htm>).

³² See Form 1/A, filed July 1, 2016 (<https://www.sec.gov/Archives/edgar/vpr/1601/16019243.pdf>).

³³ See <https://www.nyse.com/markets/american-options/membership#directory>.

The Exchange finds it compelling that all of the Exchange's existing Members continued to purchase the Exchange's connectivity services during the period for which the Proposed Fee Increases took effect in August 2018. In particular, the Exchange believes that the Proposed Fee Increases are reasonable because the Exchange did not lose any Members (or the number of connections each Member purchased) or non-Member connections due to the Exchange increasing its connectivity fees through the First Proposed Rule Change, which fee increase became effective August 1, 2018. For example, in July 2018, fourteen (14) Members purchased 1Gb connections, ten (10) Members purchased 10Gb connections, and fifteen (15) Members purchased 10Gb ULL connections. (The Exchange notes that 1Gb connections are purchased primarily by EEM Members; 10Gb ULL connections are purchased primarily by higher volume Market Makers quoting all products across both MIAX and MIAX PEARL and targeting mid-market resting orders; and 10Gb connections are purchased by higher volume EEMs and lower volume Market Makers.) The vast majority of those Members purchased multiple such connections with the actual number of connections depending on the Member's throughput requirements based on the volume of their quote/order traffic and market data needs associated with their business model. After the fee increase, beginning August 1, 2018, the same number of Members purchased the same number of connections.³⁴ Furthermore, the total number of connections did not decrease from July to August 2018, and in fact one Member even purchased two (2) additional 10Gb ULL connections in August 2018, after the fee increase.

Also, in July 2018, four (4) non-Members purchased 1Gb connections, two (2) non-Members purchased 10Gb connections, and one (1) non-Member purchased 10Gb ULL

³⁴ The Exchange notes that one Member downgraded one connection in July of 2018, however such downgrade was done well ahead of notice of the Proposed Fee Increase and was the result of a change to the Member's business operation that was completely independent of, and unrelated to, the Proposed Fee Increases.

connections. After the fee increase, beginning August 1, 2018, the same non-Members purchased the same number of connections across all available alternatives and two (2) additional non-Members purchased three (3) more connections after the fee increase. These non-Members freely purchased their connectivity with the Exchange in order to offer trading services to other firms and customers, as well as access to the market data services that their connections to the Exchange provide them, but they are not required or compelled to purchase any of the Exchange's connectivity options. MIAX did not experience any noticeable change (increase or decrease) in order flow sent by its market participants as a result of the fee increase.

Of those Members and non-Members that bought multiple connections, no firm dropped any connections beginning August 1, 2018, when the Exchange increased its fees. Nor did the Exchange lose any Members. Furthermore, the Exchange did not receive any comment letters or official complaints from any Member or non-Member purchaser of connectivity regarding the increased fees regarding how the fee increase was unreasonable, unduly burdensome, or would negatively impact their competitiveness amongst other market participants. These facts, coupled with the discussion above, showing that it is not necessary to join and/or connect to all options exchanges, demonstrate that the Exchange's fees are constrained by competition and are reasonable and not contrary to the Law of Demand as SIFMA suggests. Therefore, the Exchange believes that the Proposed Fee Increases are fair, equitable, and non-discriminatory, as the fees are competitive.

The Exchange believes that the Proposed Fee Increases are equitably allocated among Members and non-Members, as evidenced by the fact that the fee increases are allocated across all connectivity alternatives, and there is not a disproportionate number of Members purchasing any alternative -- fourteen (14) Members purchased 1Gb connections, ten (10) Members purchased 10Gb connections, fifteen (15) Members purchased 10Gb ULL connections, four (4)

non-Members purchased 1Gb connections, two (2) non-Members purchased 10Gb connections, and one (1) non-Member purchased 10Gb ULL connections. The Exchange recognizes that the relative fee increases are 27% for the 1Gb connection, 10.9% for the 10Gb connection, and 9.4% for the 10Gb ULL connection, but the Exchange believes that percentage increase differentiation is appropriate, given the different levels of service provided and the largest percentage increase being associated with the lowest cost connection. Further, the Exchange believes that the fees are reasonably allocated as the users of the higher bandwidth connections consume the most resources of the Exchange's network. It is these firms that account that also account for the vast majority of the Exchange's trading volume. The purchasers of the 10Gb ULL connectivity account for approximately 75% of the volume on the Exchange. For example, in April of 2019, to date, 11 million contracts of the 14 million contracts executed were done by the top market making firms on the Exchange in simple (non-complex) volume. The Exchange considered whether to increase transaction fees and other fees in order to offset its costs as an alternative to increasing connectivity fees, however, the Exchange determined that increasing its connectivity fees was the only viable alternative. This is because the increased costs are more closely associated with connectivity, as well as the intense level of competition among the options exchanges for order flow through transaction fees.

Second, the Exchange believes that its proposal is consistent with Section 6(b)(4) of the Act because the Proposed Fee Increases allow the Exchange to recover a portion (less than all) of the increased costs incurred by the Exchange associated with providing and maintaining the necessary hardware and other network infrastructure to support this technology since it last filed to increase its connectivity fees in December 2016, which became effective on January 1, 2017.³⁵

³⁵ See Securities Exchange Act Release No. 79666 (December 22, 2016), 81 FR 96133 (December 29, 2016) (SR-MIAX-2016-47) (Notice of Filing and Immediate

Put simply, the costs of the Exchange to provide these services have increased considerably over this time, as more fully-detailed and quantified below. The Exchange believes that it is reasonable and appropriate to increase its fees charged for use of its connectivity to partially offset the increased costs the Exchange incurred during this time associated with maintaining and enhancing a state-of-the-art exchange network infrastructure in the U.S. options industry.

In particular, the Exchange's increased costs associated with supporting its network are due to several factors, including increased costs associated with maintaining and expanding a team of highly-skilled network engineers (the Exchange also hired additional network engineering staff in 2017 and 2018), increasing fees charged by the Exchange's third-party data center operator, and costs associated with projects and initiatives designed to improve overall network performance and stability, through the Exchange's research and development ("R&D") efforts.

In order to provide more detail and to quantify the Exchange's increased costs, the Exchange notes that increased costs are associated with the infrastructure and increased headcount to fully-support the advances in infrastructure and expansion of network level services, including customer monitoring, alerting and reporting. Additional technology expenses were incurred related to the expanding its Information Security services, enhanced network monitoring and customer reporting, as well as Regulation SCI mandated processes associated with network technology. All of these additional expenses have been incurred by the Exchange since it last increased its connectivity fees on January 1, 2017.

Additionally, while some of the expense is fixed, much of the expense is not fixed, and thus increases as the number of connections increase. For example, new 1Gb, 10Gb, and 10Gb

ULL connections require the purchase of additional hardware to support those connections as well as enhanced monitoring and reporting of customer performance that MIAX and its affiliates provide. And 10Gb ULL connections require the purchase of specialized, more costly hardware. Further, as the total number of all connections increase, MIAX and its affiliates need to increase their data center footprint and consume more power, resulting in increased costs charged by their third-party data center provider. Accordingly, cost to MIAX and its affiliates is not entirely fixed. Just the initial fixed cost buildout of the network infrastructure of MIAX and its affiliates, including both primary/secondary sites and disaster recovery, was over \$30 million. The current annual operational expense (which relates 100% to the network infrastructure, associated data center processing equipment required to support various connections, network monitoring systems and associated software required to support the various forms of connectivity) is approximately \$8.5 million. This does not include additional indirect expenses that the Exchange incurs that are allocated to the support of network infrastructure of the Exchange. These costs have increased over 10% since the last time the Exchange increased its connectivity fees on January 1, 2017. As these operational expenses increase, MIAX and its affiliates look to offset those costs through increased connectivity fees.

A more detailed breakdown of the operational expense increases include an approximate 70% increase in technology-related personnel costs in infrastructure, due to expansion of services/support (increase of approximately \$800,000); an approximate 10% increase in datacenter costs due to price increases and footprint expansion (increase of approximately \$500,000); an approximate 5% increase in vendor-supplied dark fiber due to price increases and expanded capabilities (increase of approximately \$25,000); and a 30% increase in market data connectivity fees (increase of approximately \$200,000). Of note, regarding market data connectivity fee increased cost, this is the cost associated with MIAX

consuming connectivity/content from the equities markets in order to operate the Exchange, causing MIAX to effectively pay its competitors for this connectivity.

The Exchange also incurred additional significant capital expenditures over this same period to upgrade and enhance the underlying technology components, as more fully-detailed below.

Further, because the costs of operating a data center are significant and not economically feasible for the Exchange, the Exchange does not operate its own data centers, and instead contracts with a third-party data center provider. The Exchange notes that larger, dominant exchange operators own/operate their data centers, which offers them greater control over their data center costs. Because those exchanges own and operate their data centers as profit centers, the Exchange is subject to additional costs. As a result, the Exchange is subject to fee increases from its data center provider, which the Exchange experienced in 2017 and 2018 of approximately 10%, as cited above. Connectivity fees, which are charged for accessing the Exchange's data center network infrastructure, are directly related to the network and offset such costs.

Further, the Exchange invests significant resources in network R&D, which are not included in direct operational expenses to improve the overall performance and stability of its network. For example, the Exchange has a number of network monitoring tools (some of which were developed in-house, and some of which are licensed from third-parties), that continually monitor, detect, and report network performance, many of which serve as significant value-adds to the Exchange's Members and enable the Exchange to provide a high level of customer service. These tools detect and report performance issues, and thus enable the Exchange to proactively notify a Member (and the SIPs) when the Exchange detects a problem with a Member's connectivity. The costs associated with the maintenance and

improvement of existing tools and the development of new tools resulted in significant increased cost to the Exchange since January 1, 2017.

Certain recently developed network aggregation and monitoring tools provide the Exchange with the ability to measure network traffic with a much more granular level of variability. This is important as Exchange Members demand a higher level of network determinism and the ability to measure variability in terms of single digit nanoseconds. Also, the Exchange routinely conducts R&D projects to improve the performance of the network's hardware infrastructure. As an example, in the last year, the Exchange's R&D efforts resulted in a performance improvement, requiring the purchase of new equipment to support that improvement, and thus resulting in increased costs in the hundreds of thousands of dollars range. In sum, the costs associated with maintaining and enhancing a state-of-the-art exchange network infrastructure in the U.S. options industry is a significant expense for the Exchange that continues to increase, and thus the Exchange believes that it is reasonable to offset a portion of those increased costs by increasing its network connectivity fees, as proposed herein. The Exchange invests in and offers a superior network infrastructure as part of its overall options exchange services offering, resulting in significant costs associated with maintaining this network infrastructure, which are directly tied to the amount of the connectivity fees that must be charged to access it, in order to recover those costs.

The Exchange notes that other exchanges have similar connectivity alternatives for their participants, including similar low-latency connectivity. For example, Nasdaq PHLX LLC ("Phlx"), NYSE Arca, Inc. ("Arca"), NYSE American LLC ("NYSE American") and Nasdaq ISE, LLC ("ISE") all offer a 1Gb, 10Gb and 10Gb low latency ethernet connectivity

alternatives to each of their participants.³⁶ The Exchange further notes that Phlx, ISE, Arca and NYSE American each charge higher rates for such similar connectivity to primary and secondary facilities.³⁷ While MIAX's proposed connectivity fees are substantially lower than the fees charged by Phlx, ISE, Arca and NYSE American, MIAX believes that it offers significant value to Members over other exchanges in terms of network monitoring and reporting, which MIAX believes is a competitive advantage, and differentiates its connectivity versus connectivity to other exchanges. Additionally, the Exchange's proposed connectivity fees to its disaster recovery facility are within the range of the fees charged by other exchanges for similar connectivity alternatives.³⁸

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

MIAX does not believe that the proposed rule changes will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. In particular, the Exchange has received no official complaints from Members or others who connect to it that its fees or the Proposed Fee Increases are negatively impacting or would negatively impact their abilities to compete with other market participants. Further, the Exchange is unaware of any assertion that its existing fee levels or the Proposed Fee Increases would somehow unduly impair

³⁶ See Phlx and ISE Rules, General Equity and Options Rules, General 8, Section 1(b). Phlx and ISE each charge a monthly fee of \$2,500 for each 1Gb connection, \$10,000 for each 10Gb connection and \$15,000 for each 10Gb Ultra connection, which the equivalent of the Exchange's 10Gb ULL connection. See also NYSE American Fee Schedule, Section V.B, and Arca Fees and Charges, Co-Location Fees. NYSE American and Arca each charge a monthly fee of \$5,000 for each 1Gb circuit, \$14,000 for each 10Gb circuit and \$22,000 for each 10Gb LX circuit, which the equivalent of the Exchange's 10Gb ULL connection.

³⁷ Id.

³⁸ See Nasdaq ISE, Options Rules, Options 7, Pricing Schedule, Section 11.D. (charging \$3,000 for disaster recovery testing & relocation services); see also Cboe Exchange, Inc. ("Cboe") Fees Schedule, p. 14, Cboe Command Connectivity Charges (charging a monthly fee of \$2,000 for a 1Gb disaster recovery network access port and a monthly fee of \$6,000 for a 10Gb disaster recovery network access port).

its competition with other options exchanges. To the contrary, if the fees charged are deemed too high by market participants, they can simply disconnect.

While the Exchange recognizes the distinction between connecting to an exchange and trading at the exchange, the Exchange notes that it operates in a highly competitive options market in which market participants can readily connect and trade with venues they desire. In such an environment, the Exchange must continually adjust its fees to remain competitive with other exchanges. The Exchange believes that the proposed changes reflect this competitive environment.

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

Written comments were neither solicited nor received.

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

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A)(ii) of the Act,³⁹ and Rule 19b-4(f)(2)⁴⁰ thereunder. At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or 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:

³⁹ 15 U.S.C. 78s(b)(3)(A)(ii).

⁴⁰ 17 CFR 240.19b-4(f)(2).

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:to-rule-comments@sec.gov). Please include File Number SR-MIAX-2019-23 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-MIAX-2019-23. 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-MIAX-2019-23 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.⁴¹

Brent J. Fields
Secretary

⁴¹ 17 CFR 200.30-3(a)(12).

Exhibit 5

New text is underlined;
 Deleted text is in [brackets]

MIAX Options Fee Schedule

1) – 4) No change.

5) **System Connectivity Fees**

a) **Monthly Member Network Connectivity Fee**

Member Network Connectivity Per Month	Primary/Secondary Facility 1 Gigabit Per Connection	Disaster Recovery Facility 1 Gigabit Per Connection	Primary/Secondary Facility 10 Gigabit Per Connection	Disaster Recovery Facility 10 Gigabit Per Connection	Primary/Secondary Facility 10 Gigabit ULL Per Connection
Individual Firm	\$(1,100.00) <u>1,400.00</u>	\$(500.00) <u>550.00</u>	\$(5,500.00) <u>6,100.00</u>	\$(2,500.00) <u>2,750.00</u>	\$(8,500.00) <u>9,300.00</u>

Monthly Member Network Connectivity fees for connectivity with the Primary/Secondary Facility will be assessed in any month the Member is credentialed to use any of the MIAX APIs or Market Data feeds in the production environment and will be pro-rated when a Member makes a change to the connectivity (by adding or deleting connections) with such pro-rated fees based on the number of trading days that the Member has been credentialed to utilize any of the MIAX APIs or Market Data feeds in the production environment through such connection, divided by the total number of trading days in such month multiplied by the applicable monthly rate. Monthly Member Network Connectivity fees for connectivity with the Disaster Recovery Facility will be assessed in each month during which the Member has established connectivity with the Disaster Recovery Facility.

Members utilizing the MENI to connect to the trading platforms, market data systems, test systems, and disaster recovery facilities of the Exchange and MIAX PEARL via a single, shared connection will only be assessed one Monthly Member Network Connectivity Fee per connection, regardless of the trading platforms, market data systems, test systems, and disaster recovery facilities accessed via such connection.

b) Monthly Non-Member Network Connectivity Fee

Non-Member Network Connectivity Per Month	Primary/Secondary Facility 1 Gigabit Per Connection	Disaster Recovery Facility 1 Gigabit Per Connection	Primary/Secondary Facility 10 Gigabit Per Connection	Disaster Recovery Facility 10 Gigabit Per Connection	Primary/Secondary Facility 10 Gigabit ULL Per Connection
Service Bureau/Extranet Provider and other non-Members	\$[1,100.00] <u>1,400.00</u>	[\$500.00] <u>550.00</u>	[\$5,500.00] <u>6,100.00</u>	[\$2,500.00] <u>2,750.00</u>	[\$8,500.00] <u>9,300.00</u>

Monthly Non-Member Network Connectivity fees for connectivity with the Primary/Secondary Facility will be assessed in each month the Non-Member has been credentialed to use any of the MIAX APIs or Market Data feeds via the network connection in the production environment and will be pro-rated when a Non-Member makes a change to the connectivity (by adding or deleting connections) with such pro-rated fees based on the number of trading days that the Non-Member has been credentialed to utilize any of the MIAX APIs or Market Data feeds in the production environment through such connection, divided by the total number of trading days in such month multiplied by the applicable monthly rate. Monthly Non-Member Network Connectivity fees for connectivity with the Disaster Recovery Facility will be assessed in each month during which the Non-Member has established connectivity with the Disaster Recovery Facility.

Non-Members utilizing the MENI to connect to the trading platforms, market data systems, test systems, and disaster recovery facilities of the Exchange and MIAX PEARL via a single, shared connection will only be assessed one Monthly Non-Member Network Connectivity Fee per connection, regardless of the trading platforms, market data systems, test systems, and disaster recovery facilities accessed via such connection.

c) – f) No change.
