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G–117a	100	15	25
Total	100		25

Additional Information or Comments: To request more information or to obtain a copy of the information collection justification, forms, and/or supporting material, contact Kennisha C. Tucker at (312) 469–2591 or *Kennisha.Tucker@rrb.gov*. Comments regarding the information collection should be addressed to Brian Foster, Railroad Retirement Board, 844 North Rush Street, Chicago, Illinois 60611–1275 or emailed to *Brian.Foster@rrb.gov*. Written comments should be received within 60 days of this notice.

Brian D. Foster,

Clearance Officer.

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SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–88164; File No. SR–CBOE–2020–005]

Self-Regulatory Organizations; Cboe Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Its Fees Schedule in Connection With Migration

February 11, 2020.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the ''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on January 28, 2020, Cboe Exchange, Inc. (the ''Exchange'' or ''Cboe Options'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I, II and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

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

Cboe Exchange, Inc. (the ''Exchange'' or ''Cboe Options'') proposes to amend its Fees Schedule in connection with migration. The text of the proposed rule change is provided in Exhibit 5.

The text of the proposed rule change is also available on the Exchange's website (*http://www.cboe.com/AboutCBOE/CBOELegalRegulatoryHome.aspx*), at the Exchange's Office of the Secretary, and at the Commission's Public Reference Room.

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

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

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

1. Purpose

In 2016, the Exchange's parent company, Cboe Global Markets, Inc. (formerly named CBOE Holdings, Inc.) (''Cboe Global''), which is also the parent company of Cboe C2 Exchange, Inc. (''C2''), acquired Cboe EDGA Exchange, Inc. (''EDGA''), Cboe EDGX Exchange, Inc. (''EDGX'' or ''EDGX Options''), Cboe BZX Exchange, Inc. (''BZX'' or ''BZX Options''), and Cboe BYX Exchange, Inc. (''BYX'' and, together with Cboe Options, C2, EDGX, EDGA, and BZX, the ''Affiliated Exchanges''). The Cboe Affiliated Exchanges recently aligned certain system functionality, including with respect to connectivity, retaining only intended differences between the Affiliated Exchanges, in the context of a technology migration. The Exchange migrated its trading platform to the same system used by the Affiliated Exchanges, which the Exchange completed on October 7, 2019 (the ''migration''). As a result of this migration, the Exchange's pre-migration connectivity architecture was rendered obsolete, and as such, the Exchange now offers new functionality, including new logical connectivity, and therefore proposes to adopt corresponding fees.[3] In determining the proposed fee changes, the Exchange assessed the impact on market participants to ensure that the proposed fees would not create an undue financial burden on any market participants, including smaller market participants. While the Exchange has no way of predicting with certainty the impact of the proposed changes, the Exchange had anticipated its post-migration connectivity revenue[4] to be approximately 1.75% lower than connectivity revenue pre-migration.[5] In addition to providing a consistent technology offering across the Cboe Affiliated Exchanges, the migration also provided market participants a latency equalized infrastructure, improved system performance, and increased sustained order and quote per second capacity, as discussed more fully below. Accordingly, in connection with the migration and in order to more closely align the Exchange's fee structure with that of its Affiliated Exchanges, the Exchange intends to update and simplify its fee structure with respect to access and connectivity and adopt new access and connectivity fees.[6]

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

[2] 17 CFR 240.19b–4.

[3] As of October 7, 2019, market participants no longer have the ability to connect to the old Exchange architecture.

[4] Connectivity revenue post-migration includes revenue from physical port fees (other than for disaster recovery), Cboe Data Services Port Fee, logical port fees, Trading Permit Fees, Market-Maker EAP Appointment Unit fees, Tier Appointment Surcharges and Floor Broker Trading Surcharges, less the Floor Broker ADV discounts and discounts on BOE Bulk Ports via the Affiliate Volume Plan and the Market-Maker Access Credit program.

[5] The Exchange does not anticipate realizing the projected revenue reduction prior to February 2020, as the Exchange's legacy physical ports will not be decommissioned until January 31, 2020 and firms may still be in the process of transitioning their connectivity. As such, the Exchange believes any changes in revenue until such time are not reflective of the predicted and modeled impact.

[6] The Exchange initially filed the proposed fee changes on October 1, 2019 (SR–CBOE–2019–077). On business date October 2, 2019, the Exchange withdrew that filing and submitted SR–CBOE–2019–082, *See* Securities Exchange Act Release No. 87304 (October 15, 2019), 84 FR 56240, (October 21, 2019) (''Original Filing''). On business date November 29, 2019, Securities Exchange Act Release No. 87727 (December 12, 2019), 84 FR

Continued

Physical Connectivity

A physical port is utilized by a Trading Permit Holder (''TPH'') or non-TPH to connect to the Exchange at the data centers where the Exchange's servers are located. The Exchange currently assesses fees for Network Access Ports for these physical connections to the Exchange. Specifically, TPHs and non-TPHs can elect to connect to Cboe Options' trading system via either a 1 gigabit per second (''Gb'') Network Access Port or a 10 Gb Network Access Port. Pre-migration the Exchange assessed a monthly fee of $1,500 per port for 1 Gb Network Access Ports and a monthly fee of $5,000 per port for 10 Gb Network Access Ports for access to Cboe Options primary system. Through January 31, 2020, Cboe Options market participants will continue to have the ability to connect to Cboe Options' trading system via the current Network Access Ports. As of October 7, 2019, in connection with the migration, TPHs and non-TPHs may alternatively elect to connect to Cboe Options via new latency equalized Physical Ports.[7] The new Physical Ports similarly allow TPHs and non-TPHs the ability to connect to the Exchange at the data center where the Exchange's servers are located and TPHs and non-TPHs have the option to connect via 1 Gb or 10 Gb Physical Ports. As noted above, both the new 1 Gb and 10 Gb Physical Ports provide latency equalization, meaning that each market participant will be afforded the same latency for 1 Gb or 10 Gb Physical Ports in the primary data center to the Exchange's customer-facing switches regardless of location of the market participant's cage[8] in the primary data center relative to the Exchange's servers. Conversely, the legacy Network Access Ports are not latency equalized, meaning the location of a market participant's cage within the data center may affect latency. For example, in the legacy system, a cage located further from the Exchange's servers may experience higher latency than those located closer to the Exchange's servers.[9] As such, the proposed Physical Ports ensure all market participants connected to the Exchange via the new Physical Ports will receive the same respective latency for each port size and ensure that no market participant has a latency advantage over another market participant within the primary data center.[10] Additionally, the new infrastructure utilizes new and faster switches resulting in lower overall latency.

The Exchange proposes to assess the following fees for any physical port, regardless of whether the TPH or non-TPH connects via the current Network Access Ports or the new Physical Ports. Specifically, the Exchange proposes to continue to assess a monthly fee of $1,500 per port for 1 Gb Network Access Ports and new Physical Ports and increase the monthly fee for 10 Gb Network Access Ports and new Physical Ports to $7,000 per port. Physical port fees will be prorated based on the remaining trading days in the calendar month. The proposed fee for 10 Gb Physical Ports is in line with the amounts assessed by other exchanges for similar connections by its Affiliated Exchanges and other Exchanges that utilize the same connectivity infrastructure.[11]

In addition to the benefits resulting from the new Physical Ports providing latency equalization and new switches (*i.e.,* improved latency), TPHs and non-TPHs may be able to reduce their overall physical connectivity fees. Particularly, Network Access Port fees are assessed for unicast (orders, quotes) and multicast (market data) connectivity separately. More specifically, Network Access Ports may only receive one type of connectivity each (thus requiring a market participant to maintain two ports if that market participant desires both types of connectivity). The new Physical Ports however, allow access to both unicast and multicast connectivity with a single physical connection to the Exchange. Therefore, TPHs and non-TPHs that currently purchase two legacy Network Access Ports for the purpose of receiving each type of connectivity now have the option to purchase only one new Physical Port to accommodate their connectivity needs, which may result in reduced costs for physical connectivity.[12]

Cboe Data Services—Port Fees

The Exchange proposes to amend the ''Port Fee'' under the Cboe Data Services (''CDS'') Fees Schedule. Currently, the Port Fee is payable by any Customer[13] that receives data through two types of sources; a direct connection to CDS (''direct connection'') or through a connection to CDS provided by an extranet service provider (''extranet connection''). The Port Fee applies to receipt of any Cboe Options data feed but is only assessed once per data port. The Exchange proposes to amend the monthly CDS Port Fee to provide that it is payable ''per source'' used to receive data, instead of ''per data port''. The Exchange also proposes to increase the fee from $500 per data port/month to $1,000 per data source/month.[14] The

69428, (December 18, 2019) (''Second Proposed Rule Change''). On January 28, 2020 the Exchange withdrew that filing and submitted this filing (''Third Proposed Rule Change'').

[7] As previously noted, market participants will continue to have the option of connecting to Cboe Options via a 1 Gbps or 10 Gbps Network Access Port at the same rates as proposed, respectively.

[8] A market participant's ''cage'' is the cage within the data center that contains a market participant's servers, switches and cabling.

[9] The Exchange equalizes physical connectivity in the data center for its primary system by taking the farthest possible distance that a Cboe market participant cage may exist from the Exchange's customer-facing switches and using that distance as the cable length for any cross-connect.

[10] The Exchange notes that 10 Gb Physical Ports have an 11 microsecond latency advantage over 1 Gb Physical Ports. Other than this difference, there are no other means to receive a latency advantage as compared to another market participant in the new connectivity structure.

[11] *See* Cboe EDGA U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe EDGX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe BZX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe BYX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe EDGX Options Exchange Fee Schedule, Physical Connectivity Fees; and Cboe BZX Options Exchange Fee Schedule, Physical Connectivity Fees (collectively, ''Affiliated Exchange Fee Schedules''). *See e.g.,* Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. 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. *See also* Nasdaq Price List—Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. *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.

[12] The Exchange proposes to eliminate the current Cboe Command Connectivity Charges table in its entirety and create and relocate such fees in a new table in the Fees Schedule that addresses fees for physical connectivity, including fees for the current Network Access Ports, the new Physical Ports and Disaster Recovery (''DR'') Ports. The Exchange notes that it is not proposing any changes with respect to DR Ports other than renaming the DR ports from ''Network Access Ports'' to ''Physical Ports'' to conform to the new Physical Port terminology. The Exchange also notes that subsequent to the initial filings that proposed these fee changes on October 1 and 2, 2019 (SR–CBOE–2019–077 and SR–CBOE–2019–082), the Exchange amended the proposed port fees to waive fees for ports used for PULSe in filing No. SR–CBOE–2019–105. The additions proposed by filing SR–CBOE–2019–105 are double underlined in Exhibit 5A and the deletions are doubled bracketed in Exhibit 5A.

[13] A Customer is any person, company or other entity that, pursuant to a market data agreement with CDS, is entitled to receive data, either directly from CDS or through an authorized redistributor (*i.e.,* a Customer or extranet service provider), whether that data is distributed externally or used internally.

[14] For example, under the pre-migration ''per port'' methodology, if a TPH maintained 4 ports that receive market data, that TPH would be assessed $2,000 per month (*i.e.,* $500 × 4 ports), regardless of how many sources it used to receive data. Under the proposed ''per source'' methodology, if a TPH maintains 4 ports that

Exchange notes the proposed change in assessing the fee (*i.e.,* per source vs per port) and the proposed fee amount are the same as the corresponding fee on its affiliate C2.[15]

In connection with the proposed change, the Exchange also proposes to rename the ''Port Fee'' to ''Direct Data Access Fee''. As the fee will be payable ''per data source'' used to receive data, instead of ''per data port'', the Exchange believes the proposed name is more appropriate and that eliminating the term ''port'' from the fee will eliminate confusion as to how the fee is assessed.

Logical Connectivity

Next, the Exchange proposes to amend its login fees. By way of background, Cboe Options market participants were able to access Cboe Command via either a CMI or a FIX Port, depending on how their systems are configured. Effective October 7, 2019, market participants are no longer able to use CMI and FIX Login IDs. Rather, the Exchange utilizes a variety of logical connectivity ports as further described below. Both a legacy CMI/FIX Login ID and logical port represent a technical port established by the Exchange within the Exchange's trading system for the delivery and/or receipt of trading messages—*i.e.,* orders, accepts, cancels, transactions, etc. Market participants that wish to connect directly to the Exchange can request a number of different types of ports, including ports that support order entry, customizable purge functionality, or the receipt of market data. Market participants can also choose to connect indirectly through a number of different third-party providers, such as another broker-dealer or service bureau that the Exchange permits through specialized access to the Exchange's trading system and that may provide additional services or operate at a lower mutualized cost by providing access to multiple members. In light of the discontinuation of CMI and FIX Login IDs, the Exchange proposes to eliminate the fees associated with the CMI and FIX login IDs and adopt the below pricing for logical connectivity in its place.

Service	Cost per month
Logical Ports (BOE, FIX) 1 to 5.	$750 per port.
Logical Ports (BOE, FIX) >5.	$800 per port.
Logical Ports (Drop)	$750 per port.
BOE Bulk Ports 1 to 5	$1,500 per port.
BOE Bulk Ports 6 to 30	$2,500 per port.
BOE Bulk Ports >30	$3,000 per port.
Purge ports	$850 per port.
GRP Ports	$750/primary (A or C Feed).
Multicast PITCH/Top Spin Server Ports.	$750/set of primary (A or C feed).

The Exchange proposes to provide for each of the logical connectivity fees that new requests will be prorated for the first month of service. Cancellation requests are billed in full month increments as firms are required to pay for the service for the remainder of the month, unless the session is terminated within the first month of service. The Exchange notes that the proration policy is the same on its Affiliated Exchanges.[16]

Logical Ports (BOE, FIX, Drop): The new Logical Ports represent ports established by the Exchange within the Exchange's system for trading purposes. Each Logical Port established is specific to a TPH or non-TPH and grants that TPH or non-TPH the ability to operate a specific application, such as order/quote[17] entry (FIX and BOE Logical Ports) or drop copies (Drop Logical Ports). Similar to CMI and FIX Login IDs, each Logical Port will entitle a firm to submit message traffic of up to specified number of orders per second.[18] The Exchange proposes to assess $750 per port per month for all Drop Logical Ports and also assess $750 per port per month (which is the same amount currently assessed per CMI/FIX Login ID per month), for the first 5 FIX/BOE Logical Ports and thereafter assess $800 per port, per month for each additional FIX/BOE Logical Port. While the proposed ports will be assessed the same monthly fees as current CMI/FIX Login IDs (for the first five logical ports), the proposed logical ports provide for significantly more message traffic as shown below:

	CMI/FIX login Ids		BOE/FIX logical ports
	Quotes	Orders	Quotes/orders
Bandwidth Limit per login	5,000 quotes/3 sec[19]	30 orders/sec	15,000 quotes/orders/3 sec.
Cost	$750 each	$750 each	$750/$800 each.
Cost per Quote/Order Sent @Limit	$0.15 per quote/3 sec	$25.00 per order/sec	$0.05/$0.053 per quote/order/3 sec.

Logical Port fees will be limited to Logical Ports in the Exchange's primary data center and no Logical Port fees will be assessed for redundant secondary data center ports. Each BOE or FIX Logical Port will incur the logical port fee indicated in the table above when used to enter up to 70,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 70,000 per day per logical port will incur an additional logical port fee of $800 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all of a market participant's subscribed BOE and FIX Logical Ports. The Exchange believes that the pricing implications of going beyond 70,000 orders per trading day per Logical Port encourage users to mitigate message traffic as necessary. The Exchange notes that the proposed fee of $750 per port is the same amount assessed not only for current CMI and

receive market data, but receives data through only one source (*e.g.,* a direct connection) that TPH would be assessed $1,000 per month (*i.e.,* $1000 x 1 source). If that TPH maintains 4 ports but receives data from both a direct connection and an extranet connection, that TPH would be assessed $2,000 per month (*i.e.,* $1,000 × 2 sources). Similarly, if that TPH maintains 4 ports and receives data from two separate extranet providers, that TPH would be assessed $2,000 per month (*i.e.,* $1,000 × 2).

[15] *See* Cboe C2 Options Exchange Fee Schedule, Cboe Data Services, LLC Fees, Section IV, Systems Fees.

[16] *See* Affiliated Exchange Fee Schedules, Logical Port Fees.

[17] As of October 7, 2019, the definition of quote in Cboe Options Rule 1.1 means a firm bid or offer a Market-Maker (a) submits electronically as an order or bulk message (including to update any bid or offer submitted in a previous order or bulk message) or (b) represents in open outcry on the trading floor.

[18] Login Ids restrict the maximum number of orders and quotes per second in the same way logical ports do, and Users may similarly have multiple logical ports as they may have Trading Permits and/or bandwidth packets to accommodate their order and quote entry needs.

[19] Each Login ID has a bandwidth limit of 80,000 quotes per 3 seconds. However, in order to place such bandwidth onto a single Login ID, a TPH or non-TPH would need to purchase a minimum of 15 Market-Maker Permits or Bandwidth Packets (each Market-Maker Permit and Bandwidth Packet provides 5,000 quotes/3 sec). For purposes of comparing ''quote'' bandwidth, the provided example assumes only 1 Market-Maker Permit or Bandwidth Packet has been purchased.

[20] *See* Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

FIX Login Ids, but also similar ports available on an affiliate exchange.[20]

The Exchange also proposes to provide that the fee for one FIX Logical Port connection to PULSe and one FIX Logical Port connection to Cboe Silexx (for FLEX trading purposes) will be waived per TPH. The Exchange notes that only one FIX Logical Port connection is required to support a firm's access through each of PULSe and Cboe Silexx FLEX.

BOE Bulk Logical Ports: The Exchange also offers BOE Bulk Logical Ports, which provide users with the ability to submit single and bulk order messages to enter, modify, or cancel orders designated as Post Only Orders with a Time-in-Force of Day or GTD with an expiration time on that trading day. While BOE Bulk Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market-Makers or firms that conduct similar business activity, as the primary purpose of the proposed bulk message functionality is to encourage market-maker quoting on exchanges. As indicated above, BOE Bulk Logical Ports are assessed $1,500 per port, per month for the first 5 BOE Bulk Logical Ports, assessed $2,500 per port, per month thereafter up to 30 ports and thereafter assessed $3,000 per port, per month for each additional BOE Bulk Logical Port. Like CMI and FIX Login IDs, and FIX/BOX Logical Ports, BOE Bulk Ports will also entitle a firm to submit message traffic of up to specified number of quotes/orders per second.[21] The proposed BOE Bulk ports also provide for significantly more message traffic as compared to current CMI/FIX Login IDs, as shown below:

	CMI/FIX login Ids	BOE bulk ports
	Quotes	Quotes [22]
Bandwidth Limit	5,000 quotes/3 sec [23]	225,000 quotes 3 sec.
Cost	$750 each	$1,500/$2,500/$3,000 each.
Cost per Quote/Order Sent @Limit	$0.15 per quote/3 sec	$0.006/$0.011/$0.013 per quote/3 sec.

Each BOE Bulk Logical Port will incur the logical port fee indicated in the table above when used to enter up to 30,000,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 30,000,000 orders per day per BOE Bulk Logical Port will incur an additional logical port fee of $3,000 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all of a market participant's subscribed BOE Bulk Logical Ports. The Exchange believes that the pricing implications of going beyond 30,000,000 orders per trading day per BOE Bulk Logical Port encourage users to mitigate message traffic as necessary. The Exchange notes that the proposed BOE Bulk Logical Port fees are similar to the fees assessed for these ports by BZX Options.[24]

Purge Ports: As part of the migration, the Exchange introduced Purge Ports to provide TPHs additional risk management and open order control functionality. Purge ports were designed to assist TPHs, in the management of, and risk control over, their quotes, particularly if the TPH is dealing with a large number of options. Particularly, Purge Ports allow TPHs to submit a cancelation for all open orders, or a subset thereof, across multiple sessions under the same Executing Firm ID (''EFID''). This would allow TPHs to seamlessly avoid unintended executions, while continuing to evaluate the direction of the market. While Purge Ports are available to all market participants, the Exchange anticipates they will be used primarily by Market-Makers or firms that conduct similar business activity and are therefore exposed to a large amount of risk across a number securities. The Exchange notes that market participants are also able to cancel orders through FIX/BOE Logical Ports and as such a dedicated Purge Port is not required nor necessary. Rather, Purge Ports were specially developed as an optional service to further assist firms in effectively managing risk. As indicated in the table above, the Exchange proposes to assess a monthly charge of $850 per Purge Port. The Exchange notes that the proposed fee is in line with the fee assessed by other exchanges, including its Affiliated Exchanges, for Purge Ports.[25]

Multicast PITCH/Top Spin Server and GRP Ports: In connection with the migration, the Exchange also offers optional Multicast PITCH/Top Spin Server (''Spin'') and GRP ports and proposes to assess $750 per month, per port. Spin Ports and GRP Ports are used to request and receive a retransmission of data from the Exchange's Multicast PITCH/Top data feeds. The Exchange's Multicast PITCH/Top data feeds are available from two primary feeds, identified as the ''A feed'' and the ''C feed'', which contain the same information but differ only in the way such feeds are received. The Exchange also offers two redundant feeds, identified as the ''B feed'' and the ''D feed.'' All secondary feed Spin and GRP Ports will be provided for redundancy at no additional cost. The Exchange notes a dedicated Spin and GRP Port is not required nor necessary. Rather, Spin ports enable a market participant to receive a snapshot of the current book quickly in the middle of the trading session without worry of gap request limits and GRP Ports were specially developed to request and receive retransmission of data in the event of missed or dropped message. The Exchange notes that the proposed fee is in line with the fee assessed for the same ports on BZX Options.[26]

Access Credits

The Exchange next proposes to amend its Affiliate Volume Plan (''AVP'') to provide Market-Makers an opportunity to obtain credits on their monthly BOE

[21] The Exchange notes that while technically there is no bandwidth limit per BOE Bulk Port, there may be possible performance degradation at 15,000 messages per second (which is the equivalent of 225,000 quotes/orders per 3 seconds). As such, the Exchange uses the number at which performance may be degraded for purposes of comparison.

[22] *See* Cboe Options Rule 1.1.

[23] Each Login ID has a bandwidth limit of 80,000 quotes per 3 seconds. However, in order to place such bandwidth onto a single Login ID, a TPH or non-TPH would need to purchase a minimum of 15 Market-Maker Permits or Bandwidth Packets (each Market-Maker Permit and Bandwidth Packet provides 5,000 quotes/3 sec). For purposes of comparing ''quote'' bandwidth, the provided example assumes only 1 Market-Maker Permit or Bandwidth Packet has been purchased.

[24] *See* Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

[25] *See e.g.,* Nasdaq ISE Options Pricing Schedule, Section 7(C), Ports and Other Services. *See also* Cboe EDGX Options Exchange Fee Schedule, Options Logical Port Fees; Cboe C2 Options Exchange Fee Schedule, Options Logical Port Fees and Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

[26] *See* Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

Bulk Port Fees.[27] By way of background, under AVP, if a TPH Affiliate [28] or Appointed OFP [29] (collectively, an ''affiliate'') of a Market-Maker qualifies under the Volume Incentive Program (''VIP'') (*i.e.,* achieves VIP Tiers 2–5), that Market-Maker will also qualify for a discount on that Market-Maker's Liquidity Provider (''LP'') Sliding Scale transaction fees and Trading Permit fees. The Exchange proposes to amend AVP to provide that qualifying Market-Makers will receive a discount on Bulk Port fees (instead of Trading Permits) where an affiliate achieves VIP Tiers 4 or 5. As discussed more fully below, the Exchange is amending its Trading Permit structure, such that off-floor Market-Makers no longer need to hold more than one Market-Maker Trading Permit. As such, in place of credits for Trading Permits, the Exchange will provide credits for BOE Bulk Ports.[30] The proposed credits are as follows:

Market Maker affiliate access credit	VIP tier	Percent credit on monthly BOE bulk port fees
Credit Tier	1	0
	2	0
	3	0
	4	15
	5	25

The Exchange believes the proposed change to AVP continues to allow the Exchange to provide TPHs that have both Market-Maker and agency operations reduced Market-Maker costs via the credits, albeit credits on BOE Bulk Port fees instead of Trading Permit fees. AVP also continues to provide incremental incentives for TPHs to strive for the higher tier levels, which provide increasingly higher benefits for satisfying increasingly more stringent criteria.

In addition to the opportunity to receive credits via AVP, the Exchange proposes to provide an additional opportunity for Market-Makers to obtain credits on their monthly BOE Bulk Port fees based on the previous month's make rate percentage. By way of background, the Liquidity Provider Sliding Scale Adjustment Table provides that Taker fees be applied to electronic ''Taker'' volume and a Maker rebate be applied to electronic ''Maker'' volume, in addition to the transaction fees assessed under the Liquidity Provider Sliding Scale.[31] The amount of the Taker fee (or Maker rebate) is determined by the Liquidity Provider's percentage of volume from the previous month that was Maker (''Make Rate'').[32] Market-Makers are given a Performance Tier based on their Make Rate percentage which currently provides adjustments to transaction fees. Thus, the program is designed to attract liquidity from traditional Market-Makers. The Exchange proposes to now also provide BOE Bulk Port fee credits if Market-Makers satisfy the thresholds of certain Performance Tiers. Particularly, the Performance Tier earned will also determine the percentage credit applied to a Market-Maker's monthly BOE Bulk Port fees, as shown below:

Market Maker access credit	Liquidity provider sliding scale adjustment performance tier	Make rate (percent based on prior month)	Percent credit on monthly BOE bulk port fees
Credit Tier	1	0–50	0
	2	Above 50–60	0
	3	Above 60–75	0
	4	Above 75–90	40
	5	Above 90	40

The Exchange believes the proposal mitigates costs incurred by traditional Market-Makers that focus on adding liquidity to the Exchange (as opposed to those that provide and take, or just take). The Exchange lastly notes that both the Market-Maker Affiliate Access Credit under AVP and the Market-Maker Access Credit tied to Performance Tiers can both be earned by a TPH, and these credits will each apply to the total monthly BOE Bulk Port Fees including any incremental BOE Bulk Port fees incurred, before any credits/adjustments have been applied (*i.e.,* an electronic MM can earn a credit from 15% to 65%).

Bandwidth Packets

As described above, post-migration, the Exchange utilizes a variety of logical ports. Part of this functionality is similar to bandwidth packets that were previously available on the Exchange. Bandwidth packets restricted the maximum number of orders and quotes per second. Post-migration, market participants may similarly have multiple Logical Ports and/or BOE Bulk Ports as they may have had bandwidth packets to accommodate their order and quote entry needs. As such, the Exchange proposes to eliminate all of

[27] As noted above, while BOE Bulk Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market Makers or firms that conduct similar business activity.

[28] For purposes of AVP, ''Affiliate'' is defined as having at least 75% common ownership between the two entities as reflected on each entity's Form BD, Schedule A.

[29] *See* Cboe Options Fees Schedule Footnote 23. Particularly, a Market-Maker may designate an Order Flow Provider (''OFP'') as its ''Appointed OFP'' and an OFP may designate a Market-Maker to be its ''Appointed Market-Maker'' for purposes of qualifying for credits under AVP.

[30] The Exchange notes that Trading Permits currently each include a set bandwidth allowance and 3 logins. Current logins and bandwidth are akin to the proposed logical ports, including BOE Bulk Ports which will primarily be used by Market-Makers.

[31] *See* Cboe Options Exchange Fees Schedule, Liquidity Provider Sliding Scale Adjustment Table.

[32] More specifically, the Make Rate is derived from a Liquidity Provider's electronic volume the previous month in all symbols excluding Underlying Symbol List A using the following formula: (i) The Liquidity Provider's total electronic automatic execution (''auto-ex'') volume (*i.e.,* volume resulting from that Liquidity Provider's resting quotes or single sided quotes/orders that were executed by an incoming order or quote), divided by (ii) the Liquidity Provider's total auto-ex volume (*i.e.,* volume that resulted from the Liquidity Provider's resting quotes/orders and volume that resulted from that LP's quotes/orders that removed liquidity). For example, a TPH's electronic Make volume in September 2019 is 2,500,000 contracts and its total electronic auto-ex volume is 3,000,000 contracts, resulting in a Make Rate of 83% (Performance Tier 4). As such, the TPH would receive a 40% credit on its monthly Bulk Port fees for the month of October 2019. For the month of October 2019, the Exchange will be billing certain incentive programs separately, including the Liquidity Provider Sliding Scale Adjustment Table, for the periods of October 1–October 4 and October 7–October 31 in light of the migration of its billing system. As such, a Market-Maker's Performance Tier for November 2019 will be determined by the Market-Maker's percentage of volume that was Maker from the period of October 7–October 31, 2019.

the current Bandwidth Packet fees.[33] The Exchange believes that the proposed pricing implications of going beyond specified bandwidth described above in the logical connectivity fees section will be able to otherwise mitigate message traffic as necessary.

CAS Servers

By way of background, in order to connect to the legacy Cboe Command, which allowed a TPH to trade on the Cboe Options System, a TPH had to connect via either a CMI or FIX interface (depending on the configuration of the TPH's own systems). For TPHs that connected via a CMI interface, they had to use CMI CAS Servers. In order to ensure that a CAS Server was not overburdened by quoting activity for Market-Makers, the Exchange allotted each Market-Maker a certain number of CASs (in addition to the shared backups) based on the amount of quoting bandwidth that they had. The Exchange no longer uses CAS Servers, post-migration. In light of the elimination of CAS Servers, the Exchange proposes to eliminate the CAS Server allotment table and extra CAS Server fee.

Trading Permit Fees

By way of background, the Exchange may issue different types of Trading Permits and determine the fees for those Trading Permits.[34] Pre-migration, the Exchange issued the following three types of Trading Permits: (1) Market-Maker Trading Permits, which were assessed a monthly fee of $5,000 per permit; (2) Floor Broker Trading Permits, which were assessed a monthly fee of $9,000 per permit; and (3) Electronic Access Permits (''EAPs''), which were assessed a monthly fee of $1,600 per. The Exchange also offered separate Market-Maker and Electronic Access Permits for the Global Trading Hours (''GTH'') session, which were assessed a monthly fee of $1,000 per permit and $500 per permit respectively.[35] For further color, a Market-Maker Trading Permit entitled the holder to act as a Market-Maker, including a Market-Maker trading remotely, DPM, eDPM, or LMM, and also provided an appointment credit of 1.0, a quoting and order entry bandwidth allowance, up to three logins, trading floor access and TPH status.[36] A Floor Broker Trading Permit entitled the holder to act as a Floor Broker, provided an order entry bandwidth allowance, up to 3 logins, trading floor access and TPH status.[37] Lastly, an EAP entitled the holder to electronic access to the Exchange. Holders of EAPs must have been broker-dealers registered with the Exchange in one or more of the following capacities: (a) Clearing TPH, (b) TPH organization approved to transact business with the public, (c) Proprietary TPHs and (d) order service firms. The permit did not provide access to the trading floor. An EAP also provided an order entry bandwidth allowance, up to 3 logins and TPH status.[38] The Exchange also provided an opportunity for TPHs to pay reduced rates for Trading Permits via the Market Maker and Floor Broker Trading Permit Sliding Scale Programs (''TP Sliding Scales''). Particularly, the TP Sliding Scales allowed Market-Makers and Floor Brokers to pay reduced rates for their Trading Permits if they committed in advance to a specific tier that includes a minimum number of eligible Market-Maker and Floor Broker Trading Permits, respectively, for each calendar year.[39]

As noted above, Trading Permits were tied to bandwidth allocation, logins and appointment costs, and as such, TPH organizations may hold multiple Trading Permits of the same type in order to meet their connectivity and appointment cost needs. Post-Migration, bandwidth allocation, logins and appointment costs are no longer tied to a Trading Permit, and as such, the Exchange proposes to modify its Trading Permit structure. Particularly, in connection with the migration, the Exchange adopted separate on-floor and off-floor Trading Permits for Market-Makers and Floor Brokers, adopted a new Clearing TPH Permit, and proposes to modify the corresponding fees and discounts. As was the case pre-migration, the proposed access fees discussed below will continue to be non-refundable and will be assessed through the integrated billing system during the first week of the following month. If a Trading Permit is issued during a calendar month after the first trading day of the month, the access fee for the Trading Permit for that calendar month is prorated based on the remaining trading days in the calendar month. Trading Permits will be renewed automatically for the next month unless the Trading Permit Holder submits written notification to the Membership Services Department by 4 p.m. CT on the second-to-last business day of the prior month to cancel the Trading Permit effective at or prior to the end of the applicable month. Trading Permit Holders will only be assessed a single monthly fee for each type of electronic Trading Permit it holds.

First, TPHs no longer need to hold multiple permits for each type of electronic Trading Permit (*i.e.,* electronic Market-Maker Trading Permits and/or and Electronic Access Permits). Rather, for electronic access to the Exchange, a TPH need only purchase one of the following permit types for each trading function the TPH intends to perform: Market-Maker Electronic Access Permit (''MM EAP'') in order to act as an off-floor Market-Maker and which will continue to be assessed a monthly fee of $5,000, Electronic Access Permit (''EAP'') in order to submit orders electronically to the Exchange[40] and which will be assessed a monthly fee of $3,000, and a Clearing TPH Permit, for TPHs acting solely as a Clearing TPH, which will be assessed a monthly fee of $2,000 (and is more fully described below). For example, a TPH organization that wishes to act as a Market-Maker and also submit orders electronically in a non-Market Maker capacity would have to purchase one MM EAP and one EAP. TPHs will be assessed the monthly fee for each type of Permit once per electronic access capacity.

Next, the Exchange proposes to adopt a new Trading Permit, exclusively for Clearing TPHs that are approved to act solely as a Clearing TPH (as opposed to those that are also approved in a capacity that allows them to submit orders electronically). Currently any TPH that is registered to act as a Clearing TPH must purchase an EAP, whether or not that Clearing TPH acts solely as a Clearing TPH or acts as a Clearing TPH and submits orders electronically. The Exchange proposes to adopt a new Trading Permit, for any TPH that is registered to act solely as Clearing TPH at a discounted rate of $2,000 per month.[41]

[33] *See* Cboe Options Fees Schedule, Bandwidth Packet Fees.

[34] *See* Cboe Options Rules 3.1(a)(iv)–(v).

[35] The fees were waived through September 2019 for the first Market-Maker and Electronic Access GTH Trading Permits.

[36] *See* Cboe Options Fees Schedule.

[37] Id.

[38] Id.

[39] Due to the October 7 migration, the Exchange had amended the TP Sliding Scale Programs to provide that any commitment to Trading Permits under the TP Sliding Scales shall be in place through September 2019, instead of the calendar year. *See* Cboe Options Fees Schedule, Footnotes 24 and 25.

[40] EAPs may be purchased by TPHs that both clear transactions for other TPHs (*i.e.,* a ''Clearing TPH'') and submit orders electronically.

[41] Cboe Option Rules provides the Exchange authority to issue different types of Trading Permits which allows holders, among other things, to act in one or more trading functions authorized by the Rules. *See* Cboe Options Rule 3.1(a)(iv). The Exchange notes that currently 17 out of 38 Clearing TPHs are acting solely as a Clearing TPH on the Exchange.

Additionally, the Exchange proposes to eliminate its fees for Global Trading Hours Trading Permits. Particularly, the Exchange proposes to provide that any Market-Maker EAP, EAP and Clearing TPH Permit provides access (at no additional cost) to the GTH session.[42] Additionally, the Exchange proposes to amend Footnote 37 of the Fees Schedule regarding GTH in connection with the migration. Currently Footnote 37 provides that separate access permits and connectivity is needed for the GTH session. The Exchange proposes to eliminate this language as that is no longer the case post-migration (*i.e.,* an electronic Trading Permits will grant access to both sessions and physical and logical ports may be used in both sessions, eliminating the need to purchase separate connectivity). The Exchange also notes that in connection with migration, the Book used during Regular Trading Hours (''RTH'') will be the same Book used during GTH (as compared to pre-migration where the Exchange maintained separate Books for each session). The Exchange therefore also proposes to eliminate language in Footnote 37 stating that GTH is a segregated trading session and that there is no market interaction between the two sessions.

The Exchange next proposes to adopt MM EAP Appointment fees. By way of background, a registered Market-Maker may currently create a Virtual Trading Crowd (''VTC'') Appointment, which confers the right to quote electronically in an appropriate number of classes selected from ''tiers'' that have been structured according to trading volume statistics, except for the AA tier.[43] Each Trading Permit historically held by a Market-Maker had an appointment credit of 1.0. A Market-Maker could select for each Trading Permit the Market-Maker held any combination of classes whose aggregate appointment cost did not exceed 1.0. A Market-Maker could not hold a combination of appointments whose aggregate appointment cost was greater than the number of Trading Permits that Market-Maker held.[44]

As discussed, post-migration, bandwidth allocation, logins and appointment costs are no longer tied to a single Trading Permit and therefore TPHs no longer need to have multiple permits for each type of electronic Trading Permit. Market-Makers must still select class appointments in the classes they seek to make markets electronically.[45] Particularly, a Market-Maker firm will only be required to have one permit and will thereafter be charged for one or more ''Appointment Units'' (which will scale from 1 ''unit'' to more than 5 ''units''), depending on which classes they elect appointments in. Appointment Units will replace the standard 1.0 appointment cost, but function in the same manner. Appointment weights (formerly known as ''appointment costs'') for each appointed class will be set forth in Cboe Options Rule 5.50(g) and will be summed for each Market-Maker in order to determine the total appointment units, to which fees will be assessed. This was the manner in which the tier costs per class appointment were summed to meet the 1.0 appointment cost, the only difference being that if a Market-Maker exceeds this ''unit'', then their fees will be assessed under the ''unit'' that corresponds to the total of their appointment weights, as opposed to holding another Trading Permit because it exceeded the 1.0 ''unit''. Particularly, the Exchange proposes to adopt a new MM EAP Appointment Sliding Scale. Appointment Units for each assigned class will be aggregated for each Market-Maker and Market-Maker affiliate. If the sum of appointments is a fractional amount, the total will be rounded up to the next highest whole Appointment Unit. The following lists the progressive monthly fees for Appointment Units:[46]

Market-maker EAP appointments	Quantity	Monthly fees (per unit)
Appointment Units.	1	$0
	2	6,000
	3 to 5	4,000
	>5	3,100

As noted above, upon migration the Exchange required separate Trading Permits for on-floor and off-floor activity. As such, the Exchange proposes to maintain a Floor Broker Trading Permit and adopt a new Market-Maker Floor Permit for on-floor Market-Makers. In addition, RUT, SPX, and VIX Tier Appointment fees will be charged separately for Permit, as discussed more fully below.

As briefly described above, the Exchange currently maintains TP Sliding Scales, which allow Market-Makers and Floor Brokers to pay reduced rates for their Trading Permits if they commit in advance to a specific tier that includes a minimum number of eligible Market-Maker and Floor Broker Trading Permits, respectively, for each calendar year. The Exchange proposes to eliminate the current TP Sliding Scales, including the requirement to commit to a specific tier, and replace it with new TP Sliding Scales as follows:[47]

Floor TPH permits	Current permit qty	Current monthly fee (per permit)	Proposed permit qty	Proposed monthly fee (per permit)
Market-Maker Floor Permit	1–10	$5,000	1	$6,000
	11–20	3,700	2 to 5	4,500
	21 or more	1,800	6 to 10	3,500
			>10	2,000
Floor Broker Permit	1	9,000	1	7,500
	2–5	5,000	2 to 3	5,700
	6 or more	3,000	4 to 5	4,500
			>5	3,200

[42] The Exchange notes that Clearing TPHs must be properly authorized by the Options Clearing Corporation (''OCC'') to operate during the Global Trading Hours session and all TPHs must have a Letter of Guarantee to participate in the GTH session (as is the case today).

[43] *See* Cboe Options Rule 5.50 (Appointment of Market-Makers).

[44] For example, if a Market-Maker selected a combination of appointments that has an aggregate appointment cost of 2.5, that Market-Maker must hold at least 3 Market-Maker Trading Permits.

[45] *See* Cboe Options Rule 5.50(a).

[46] For example, if a Market-Maker's total appointment costs amount to 3.5 unites, the Market-Maker will be assessed a total monthly fee of $14,000 (1 appointment unit at $0, 1 appointment unit at $6,000 and 2 appointment units at $4,000) as and for appointment fees and $5,000 for a Market-Maker Trading Permit, for a total monthly sum of $19,000, where a Market-Maker currently (*i.e.,* prior to migration) with a total appointment cost of 3.5 would need to hold 4 Trading Permits and would therefore be assessed a monthly fee of $20,000.

[47] In light of the proposed change to eliminate the TP Sliding Scale, the Exchange proposes to eliminate Footnote 24 in its entirety.

Floor Broker ADV Discount

Footnote 25, which governs rebates on Floor Broker Trading Permits, currently provides that any Floor Broker that executes a certain average of customer or professional customer/voluntary customer (collectively "customer") open-outcry contracts per day over the course of a calendar month in all underlying symbols excluding Underlying Symbol List A (except RLG, RLV, RUI, and UKXM), DJX, XSP, and subcabinet trades ("Qualifying Symbols"), will receive a rebate on that TPH's Floor Broker Trading Permit Fees. Specifically, any Floor Broker Trading Permit Holder that executes an average of 15,000 customer ("C" origin code) and/or professional customer and voluntary customer ("W" origin code) open-outcry contracts per day over the course of a calendar month in Qualifying Symbols will receive a rebate of $9,000 on that TPH's Floor Broker Trading Permit fees. Additionally, any Floor Broker that executes an average of 25,000 customer open-outcry contracts per day over the course of a calendar month in Qualifying Symbols will receive a rebate of $14,000 on that TPH's Floor Broker Trading Permit fees. The Exchange proposes to maintain, but modify, its discount for Floor Broker Trading Permit fees. First, the measurement criteria to qualify for a rebate will be modified to only include customer ("C" origin code) open-outcry contracts executed per day over the course of a calendar month in all underlying symbols, while the rebate amount will be modified to be a percentage of the TPH's Floor Broker Permit total costs, instead of a straight rebate.[48] The criteria and corresponding percentage rebates are noted below.[49]

Floor broker ADV discount tier	ADV	Floor broker permit rebate
1	0 to 99,999	0
2	100,000 to 174,999	15
3	>174,999	25

Next, the Exchange proposes to modify its SPX, VIX and RUT Tier Appointment Fees. Currently, these fees are assessed to any Market-Maker TPH that either (i) has the respective SPX, VIX or RUT appointment at any time during a calendar month and trades a specified number of contracts or (ii) trades a specified number of contracts in open outcry during a calendar month. More specifically, the Fees Schedule provides that the $3,000 per month SPX Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an SPX Tier Appointment at any time during a calendar month and trades at least 100 SPX contracts while that appointment is active or (ii) conducts any open outcry transaction in SPX or SPX Weeklys at any time during the month. The $2,000 per month VIX Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an SPX Tier Appointment at any time during a calendar month and trades at least 100 VIX contracts while that appointment is active or (ii) conducts at least 1000 open outcry transaction in VIX at any time during the month. Lastly, the $1,000 RUT Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an RUT Tier Appointment at any time during a calendar month and trades at least 100 RUT contracts while that appointment is active or (ii) conducts at least 1000 open outcry transaction in RUT at any time during the month.

Because the Exchange is separating Market-Maker Trading Permits for electronic and open-outcry market-making, the Exchange will be assessing separate Tier Appointment Fees for each type of Market-Maker Trading Permit. The Exchange proposes that a MM EAP will be assessed the Tier Appointment Fee whenever the Market-Maker executes the corresponding specified number of contracts, if any. The Exchange also proposes to modify the threshold number of contracts a Market-Maker must execute in a month to trigger the fee for SPX, VIX and RUT. Particularly, for SPX, the Exchange proposes to eliminate the 100 contract threshold for electronic SPX executions.[50] The Exchange notes that historically, all TPHs that trade SPX electronically executed more than 100 contracts electronically each month (*i.e.,* no TPH electronically traded between 1 and 100 contracts of SPX). As no TPH would currently be negatively impacted by this change, the Exchange proposes to eliminate the threshold for SPX and align the electronic SPX Tier Appointment Fee with that of the floor SPX Tier Appointment Fee, which is not subject to any executed volume threshold. For the VIX and RUT Tier appointments, the Exchange proposes to increase the threshold from 100 contracts a month to 1,000 contracts a month. The Exchange notes the Tier Appointment Fee amounts are not changing.[51] In connection with the proposed changes, the Exchange proposes to relocate the Tier Appointment Fees to a new table and eliminate the language in the current respective notes sections of each Tier Appointment Fee as it is no longer necessary.

Trading Permit Holder Regulatory Fee

The Fees Schedule provides for a Trading Permit Holder Regulatory Fee of $90 per month, per RTH Trading Permit, applicable to all TPHs, which fee helps more closely cover the costs of regulating all TPHs and performing regulatory responsibilities. In light of the changes to the Exchange's Trading Permit structure, the Exchange proposes to eliminate the TPH Regulatory Fee. The Exchange notes that there is no regulatory requirement to maintain this fee.

[48] As is the case today, the Floor Broker ADV Discount will be available for all Floor Broker Trading Permits held by affiliated Trading Permit Holders and TPH organizations.

[49] In light of the proposal to eliminate the TP Sliding Scales and the Floor Broker rebates currently set forth under Footnote 25, the Exchange proposes to eliminate Footnote 25 in its entirety.

[50] The Exchange notes that subsequent to the Original Filing that proposed these changes on October 1 and 2, 2019 (SR–CBOE–2019–077 and SR–CBOE–2019–082), and subsequent to the Second Proposed Rule Change filing that proposed these changes on November 29, 2019 (SR–CBOE–2019–111), the Exchange amended the proposed Market-Maker Tier Appointment fees to provide that the SPX Tier Appointment Fee will be assessed to any Market-Maker EAP that executes at least 1,000 contracts in SPX (including SPXW) excluding contracts executed during the opening rotation on the final settlement date of VIX options and futures with the expiration used in the VIX settlement calculation in filing No. SR–CBOE–2019–124. The additions proposed by filing SR–CBOE–2019–124 are double underlined in Exhibit 5A and the deletions are doubled bracketed in Exhibit 5A.

[51] Floor Broker Trading Surcharges for SPX/SPXW and VIX are also not changing. The Exchange however, is creating a new table for Floor Broker Trading Surcharges and relocating such fees in the Fees Schedule in connection with the proposal to eliminate fees currently set forth in the "Trading Permit and Tier Appointment Fees" Table.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Securities Exchange Act of 1934 (the ''Act'') and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[52] Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5) [53] requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. Additionally, the Exchange believes the proposed rule change is consistent with Section 6(b)(4) of the Act,[54] which requires that Exchange rules provide for the equitable allocation of reasonable dues, fees, and other charges among its Trading Permit Holders and other persons using its facilities. Additionally, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5) [55] requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange first stresses that the proposed changes were not designed with the objective to generate an overall increase in access fee revenue, as demonstrated by the anticipated loss of revenue discussed above. Rather, the proposed changes were prompted by the Exchange's technology migration and the adoption of a new (and improved) connectivity infrastructure, rendering the pre-migration structure obsolete. Such changes accordingly necessitated an overhaul of the Exchange's previous access fee structure and corresponding fees. Moreover, the proposed changes more closely aligns the Exchange's access fees to those of its Affiliated Exchanges, and reasonably so, as the Affiliated Exchanges offer substantially similar connectivity and functionality and are on the same platform that the Exchange has now migrated to.

The Exchange also notes that it operates in a highly competitive environment. Indeed, there are currently 16 registered options exchanges that trade options. Based on publicly available information, no single options exchange has more than 23% of the market share.[56] Further, low barriers to entry mean that new exchanges may rapidly and inexpensively enter the market and offer additional substitute platforms to further compete with the Exchange. There is also no regulatory requirement that any market participant connect to any one options exchange, that any market participant connect at a particular connection speed or act in a particular capacity on the Exchange, or trade any particular product offered on an exchange. Moreover, membership is not a requirement to participate on the Exchange. Indeed, the Exchange is unaware of any one options exchange whose membership includes every registered broker-dealer.[57] 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. 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. 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. 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 the Exchange or its affiliates, they do not purchase connectivity to the Exchange, and they do not purchase market data from the Exchange. The Exchange is also not aware of any reason why any particular market participant could not simply drop its connections and cease being a TPH of the Exchange if the Exchange were to establish ''unreasonable'' and uncompetitive price increases for its connectivity alternatives. Indeed, a number of firms currently do not participate on the Exchange, or participate on the Exchange though sponsored access arrangements rather than by becoming a member.

Additionally, the Exchange notes that non-TPHs such as Service Bureaus and Extranets resell Cboe Options connectivity.[58] This indirect connectivity is another viable alternative that is already being used by non-TPHs, which further constrains the price that the Exchange is able to charge for connectivity to its Exchange. Accordingly, in the event that a market participant views one exchange's direct connectivity and access fees as more or less attractive than the competition, they can choose to connect to that exchange indirectly or may choose not to connect to that exchange and connect instead to one or more of the other 15 options markets. For example, two TPHs that connected directly to the Exchange pre-migration, now connect indirectly via an extranet provider. The Exchange notes that it has not received any comments or evidence to suggest the two TPHs that transitioned from direct connections to an indirect connections post-migration were the result of an undue financial burden resulting from the proposed fee changes. Rather, the Exchange believes the transitions demonstrate that indirect connectivity is in fact a viable option for market participants, therefore reflecting a competitive environment.

Additionally, pre-migration, in August 2019, the Exchange had 97 members (TPH organizations), of which nearly half connected indirectly to the Exchange. Similarly, in December 2019, the Exchange had 97 members, of which nearly half of the participants connected indirectly to the Exchange. More specifically, in December 2019, 47 TPHs connected directly to the Exchange and accounted for approximately 66% of the Exchange's volume, 46 TPHs connected indirectly to the Exchange and accounted for approximately 29% of the Exchange's volume and 4 TPHs utilized

[52] 15 U.S.C. 78f(b).

[53] 15 U.S.C. 78f(b)(5).

[54] 15 U.S.C. 78f(b)(4).

[55] 15 U.S.C. 78f(b)(5).

[56] *See* Cboe Global Markets U.S. Options Market Volume Summary (January 27, 2020), available at *https://markets.cboe.com/us/options/market_statistics/*.

[57] The Exchange further notes that even the number of members between the Exchange and its 3 other options exchange affiliates vary.

[58] Prior to migration, there were 13 firms that resold Cboe Options connectivity. Post-migration, the Exchange anticipated that there would be 19 firms that resell Cboe Options connectivity (both physical and logical) and currently there are 15 firms that resell Cboe Options connectivity. The Exchange does not receive any connectivity revenue when connectivity is resold by a third-party, which often is resold to multiple customers, some of whom are agency broker-dealers that have numerous customers of their own. The Exchange does not have specific knowledge as to what latency a market participant may experience using an indirect connection versus a direct connection and notes it may vary by the service provided by the extranet provider and vary between extranet providers. The Exchange believes however, that there are extranet providers able to provide connections with a latency that is comparable to latency experienced using a direct connection.

both direct and indirect connections and accounted for approximately 5% of the Exchange's volume. In December 2019, TPHs that connected directly to the Exchange purchased a collective 179 physical ports (including legacy physical ports), 144 of which were 10 Gb ports and 35 of which were 1 Gb ports.[59] The Exchange notes that of those market participants that do connect to the Exchange, it is the individual needs of each market participant that determine the amount and type of Trading Permits and physical and logical connections to the Exchange.[60] With respect to physical connectivity, many TPHs were able to purchase small quantities of physical ports. For example, approximately 36% of TPHs that connected directly to the Exchange purchased only one to two 1 Gb ports, approximately 40% purchased only one to two 10 Gb ports, and approximately 40% had purchased a combined total of one to two ports (for both 1 Gb and 10 Gb). Further, no TPHs that connected directly to the Exchange had more than five 1 Gb ports, and only 8.5% of TPHs that connected directly to the Exchange had between six and ten 10 GB ports and only 8.5% had between ten and fourteen 10 Gb ports. There were also a combined total of 41 ports used for indirect connectivity (twenty-one 1 Gb ports and twenty 10 Gb ports).[61] The Exchange notes that all types of members connected indirectly to the Exchange including Clearing firms, Floor Brokers, order flow providers, and on-floor and off-floor Market-Makers, further reflecting the fact that each type of market participant has the option to participate on an exchange without direct connectivity. Accordingly, market participants choose if and how to connect to a particular exchange and because it is a choice, the Exchange 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.

Moreover, the Exchange notes that the Commission itself has repeatedly expressed its preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. Particularly, in Regulation NMS, the Commission highlighted the importance of market forces in determining prices and SRO revenues and, also, recognized that current regulation of the market system ''has been remarkably successful in promoting market competition in its broader forms that are most important to investors and listed companies.'' [62] The number of available exchanges to connect to ensures increased competition in the marketplace, and constrains the ability of exchanges to charge supracompetitive fees for access to its market. The Exchange is also not aware of any evidence that has been offered or demonstrated that a market share of approximately 23% provides the Exchange with anti-competitive pricing power. As discussed, if an exchange sets too high of a fee for connectivity and/or market data services for its relevant marketplace, market participants can choose to disconnect from the Exchange.

The Exchange also believes that competition in the marketplace constrains the ability of exchanges to charge supracompetitive fees for access to its market, even if such market, like the Exchange, offers proprietary products exclusive to that market. Notably, just as there is no regulatory requirement to become a member of any one options exchange, there is also no regulatory requirement for any market participant to trade any particular product, nor is there any requirement that any Exchange create or indefinitely maintain any particular product.[63] The Exchange also highlights that market participants may trade an Exchange's proprietary products through a third-party without directly or indirectly connecting to the Exchange. Additionally, market participants may trade any options product, including proprietary products, in the Over-the-Counter (OTC) markets. Market participants may also access other exchanges to trade other similar or competing proprietary or multi-listed products. Alternative products to the Exchange's proprietary products may include other options products, including options on ETFs or options futures, as well as particular ETFs or futures. For example, singly-listed SPX options may compete with the following products traded on other markets: Multiply-listed SPY options (options on the ETF), E-mini S&P 500 Options (options on futures), and E-Mini S&P 500 futures (futures on index). Other options exchanges are also not precluded from creating new proprietary products that may achieve similar objectives to (and therefore compete with) the Exchange's existing proprietary products. Indeed, even though exclusively-listed proprietary products may not be offered by competitors, a competitor could create similar products if demand were adequate. In connection with a recently proposed amendment to the National Market System Plan Governing the Consolidated Audit Trail (''CAT NMS Plan''),[64] the Commission discussed the existence of competition in the marketplace generally, and particularly for exchanges with unique business models. Specifically, the Commission contemplated the possibility of a forced exit by an exchange as a result of a proposed amendment that could reduce the amount of CAT funding a participant could recover if certain implementation milestones were missed. The Commission acknowledged that, even if an exchange were to exit the marketplace due to its proposed fee-related change, it would not significantly impact competition in the market for exchange trading services because these markets are served by multiple competitors.[65] The Commission explicitly stated that ''[c]onsequently, demand for these services in the event of the exit of a competitor is likely to be swiftly met by existing competitors.'' [66] The Commission further recognized that while some exchanges may have a unique business model that is not currently offered by competitors, a competitor could create similar business models if demand were adequate, and if they did not do so, the Commission believes it would be likely that new entrants would do so if the exchange

[59] Of the 4 TPHs that connected both directly and indirectly to the Exchange, 1 TPH had two 1 Gb Ports and the remaining 3 TPHs had a combined total of six 10 Gb ports.

[60] To assist market participants that are connected or considering connecting to the Exchange, the Exchange provides detailed information and specifications about its available connectivity alternatives in the Cboe C1 Options Exchange Connectivity Manual, as well as the various technical specifications. *See http://markets.cboe.com/us/options/support/technical/.*

[61] The Exchange notes that it does not know how many, and which kind of, connections each TPH that indirectly connects to the Exchange has.

[62] *See* Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005) (''Regulation NMS Adopting Release'').

[63] If an option class is open for trading on another national securities exchange, the Exchange may delist such option class immediately. For proprietary products, the Exchange may determine to not open for trading any additional series in that option class; may restrict series with open interest to closing transactions, provided that, opening transactions by Market-Makers executed to accommodate closing transactions of other market participants and opening transactions by TPH organizations to facilitate the closing transactions of public customers executed as crosses pursuant to and in accordance with Rule 6.74(b) or (d) may be permitted; and may delist the option class when all series within that class have expired. *See* Cboe Rule 4.4, Interpretations and Policies .11.

[64] *See* Securities Exchange Act Release No. 86901 (September 9, 2019), 84 FR 48458 (September 13, 2019) (File No. S7–13–19).

[65] *Id.*

[66] *Id.*

with that unique business model was otherwise profitable.[67] Similarly, although the Exchange may have proprietary products not offered by other competitors, not unlike unique business models, a competitor could create similar products to an existing proprietary product if demand were adequate. As such, the Exchange is still very much subject to competition and does not possess anti-competitive pricing power, even with its offering of proprietary products. Rather, the Exchange must still set reasonable connectivity pricing, otherwise prospective members would not connect, and existing members would disconnect or connect through a third-party reseller of connectivity, regardless of what products its offers.

For all the reasons discussed above and in this filing, the Exchange believes its proposed fees are reasonable as the Exchange was subject to significant competitive forces in setting its proposed fees. In addition, the Exchange believes its proposed fees are reasonable in light of the numerous benefits the new connectivity infrastructure provides market participants. As described, the post-migration connectivity architecture provides for a latency equalized infrastructure, improved system performance, and increased sustained order and quote per second capacity. As such, even where a fee for a particular type or kind of connectivity may be higher than it was to its pre-migration equivalent, such increase is reasonable given the increased benefits market participants are getting for a similar or modestly higher price. The Exchange further believes that the reasonableness of its proposed connectivity fees is demonstrated by the very fact that such fees are in line with, and in some cases lower than, the costs of connectivity at other Exchanges,[68] including its own affiliated exchanges which have the same connectivity infrastructure the Exchange has migrated to.[69]

Furthermore, in determining the proposed fee changes discussed above, the Exchange reviewed the current competitive landscape, considered the fees historically paid by market participants for connectivity to the pre-migration system, and also assessed the impact on market participants to ensure that the proposed fees would not create an undue financial burden on any market participants, including smaller market participants. Indeed, the Exchange received no comments from any TPH suggesting they were unduly burdened by the proposed changes described herein, which were first announced via Exchange Notice nearly two months in advance of the migration, nor were any timely comment letters received by the Commission by the comment period submission deadline of November 12, 2019.[70] The Exchange also underscores the fact that no comment letters were received in response to its Second Proposed Rule Change, and that no market participant has provided any written comments specifically suggesting that the Exchange has failed to provide sufficient information in the Second Proposed Rule Change to meets its burden to demonstrate its proposed fees are consistent with the requirements of the Exchange Act.

The proposed connectivity structure and corresponding fees, like the pre-migration connectivity structure and fees, continues to provide market participants flexibility with respect to how to connect to the Exchange based on each market participants' respective business needs. For example, the amount and type of physical and logical ports are determined by factors relevant and specific to each market participant, including its business model, costs of connectivity, how its business is segmented and allocated and volume of messages sent to the Exchange. Moreover, the Exchange notes that it does not have unlimited system capacity to support an unlimited number of order and quote entry per second. Accordingly, the proposed connectivity fees, and connectivity structure are designed to encourage market participants to be efficient with their respective physical and logical port usage. While the Exchange has no way of predicting with certainty the amount or type of connections market participants will in fact purchase, if any, the Exchange anticipates that like today, some market participants will continue to decline to connect and participate on the Exchange, some will participate on the Exchange via indirect connectivity, some will only purchase one physical connection and/or logical port connection, and others will purchase multiple connections.

In sum, the Exchange believes the proposed fees are reasonable and reflect a competitive environment, as the Exchange seeks to amend its access fees in connection with the migration of its technology platform, while still attracting market participants to continue to be, or become, connected to the Exchange.

Physical Ports

The Exchange believes increasing the fee for the new 10 Gb Physical Port is reasonable because unlike, the current 10 Gb Network Access Ports, the new Physical Ports provides a connection through a latency equalized infrastructure with faster switches and also allows access to both unicast order entry and multicast market data with a single physical connection. As discussed above, legacy Network Access Ports do not permit market participants to receive unicast and multicast connectivity. As such, in order to receive both connectivity types pre-migration, a market participant needed to purchase and maintain at least two 10 Gb Network Access Ports. The proposed Physical Ports not only provide latency equalization (*i.e.,* eliminate latency advantages between market participants based on location) as compared to the legacy ports, but also alleviate the need to pay for two physical ports as a result of needing unicast and multicast connectivity. Accordingly, market participants who historically had to purchase two separate ports for each of multicast and unicast activity, will be able to purchase only one port, and consequently pay lower fees overall. For example, pre-migration if a TPH had two 10 Gb legacy Network Access Ports, one of which received unicast traffic and the other of which received multicast traffic, that TPH would have been assessed $10,000 per month ($5,000 per port). Under the proposed rule change, using the new Physical Ports, that TPH has the option of utilizing one single port, instead of two ports, to receive both unicast and multicast traffic, therefore paying only $7,000 per month for a port that provides both connectivity types. The Exchange notes that pre-migration, approximately 50% of TPHs maintained two or more 10 Gb Network Access Ports. While the Exchange has no way of predicting with certainty the amount

[67] *Id.*

[68] *See e.g.,* Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. 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. *See also* Nasdaq Price List—Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. *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.

[69] *See e.g.,* Affiliated Exchange Fee Schedules, Physical Connectivity Fees. For example, Cboe BZX, Cboe EDGX and C2 each charge a monthly fee of $2,500 for each 1Gb connection and $7,500 for each 10Gb connection.

[70] *See* Exchange Notice ''Cboe Options Exchange Access and Capacity Fee Schedule Changes Effective October 1, 2019 and November 1, 2019'' Reference ID C2019081900.

or type of connections market participants will in fact purchase post-migration, the Exchange anticipated approximately 50% of the TPHs with two or more 10 Gb Network Access Ports to reduce the number of 10 Gb Physical Ports that they purchase and expected the remaining 50% of TPHs to maintain their current 10 Gb Physical Ports, but reduce the number of 1 Gb Physical Ports. Particularly, pre-migration, a number of TPHs maintained two 10 Gb Network Access Ports to receive multicast data and two 1 Gb Network Access Ports for order entry (unicast connectivity). As the new 10 Gb Physical Ports are able to accommodate unicast connectivity (order entry), TPHs may choose to eliminate their 1 Gb Network Access Ports and utilize the new 10 Gb Physical Ports for both multicast and unicast connectivity. The Exchange notes that many market participants are still transitioning to the new connectivity structure and as such, the Exchange does not expect its projections regarding port purchases to be realized prior to February 2020.

As discussed above, if a TPH deems a particular exchange as charging excessive fees for connectivity, such market participants may opt to terminate their connectivity arrangements with that exchange, and adopt a possible range of alternative strategies, including routing to the applicable exchange through another participant or market center or taking that exchange's data indirectly. Accordingly, if the Exchange charges excessive fees, it would stand to lose not only connectivity revenues but also revenues associated with the execution of orders routed to it, and, to the extent applicable, market data revenues. The Exchange believes that this competitive dynamic imposes powerful restraints on the ability of any exchange to charge unreasonable fees for physical connectivity. The Exchange also notes that the proposal represents an equitable allocation of reasonable dues, fees and other charges as its fees for physical connectivity are reasonably constrained by competitive alternatives, as discussed above. The proposed amounts are in line with, and in some cases lower than, the costs of physical connectivity at other Exchanges,[71] including the Cboe Affiliated Exchanges which have the same connectivity infrastructure the Exchange has migrated to.[72] The Exchange does not believe it is unreasonable to assess fees that are in line with fees that have already been established for the same physical ports used to connect to the same connectivity infrastructure and common platform. The Exchange believes the proposed Physical Port fees are equitable and not unreasonably discriminatory as the connectivity pricing is associated with relative usage of the various market participants and the Exchange has not been presented with any evidence to suggest its proposed fee changes would impose a barrier to entry for participants, including smaller participants. In fact, as noted above, the Exchange is unaware of any market participant that has terminated direct connectivity solely as a result of the proposed fee changes. The Exchange also believes increasing the fee for 10 Gb Physical Ports and charging a higher fee as compared to the 1 Gb Physical Port is equitable as the 1 Gb Physical Port is 1/10th the size of the 10 Gb Physical Port and therefore does not offer access to many of the products and services offered by the Exchange (*e.g.,* ability to receive certain market data products). Thus the value of the 1 Gb alternative is lower than the value of the 10 Gb alternative, when measured based on the type of Exchange access it offers. Moreover, market participants that purchase 10 Gb Physical Ports utilize the most bandwidth and therefore consume the most resources from the network. As such, the Exchange believes the proposed fees for the 1 and 10 Gb Physical Ports, respectively are reasonably and appropriately allocated.

Data Port Fees

The Exchange believes assessing the data port fee per data source, instead of per port, is reasonable because it may allow for market participants to maintain more ports at a lower cost and applies uniformly to all market participants. The Exchange believes the proposed increase is reasonable because, as noted above, market participants may pay lower fees as a result of charging per data source and not per data port. Indeed, while the Exchange has no way of predicting with certainty the impact of the proposed changes, the Exchange had anticipated approximately 76% of the 51 market participants who pay data port fees to pay the same or lower fees upon implementation of the proposed change. Currently, 46 market participants[73] pay the proposed data port fees, of which approximately 78% market participants are paying the same or lower fees in connection with the proposed change. Monthly savings for firms paying lower fees range from $500 to $6,000 per month. The Exchange also anticipated that 19% of TPHs who pay data port fees would pay a modest increase of only $500 per month. To date, approximately 22% market participants pay higher fees, with the majority of those market participants paying a modest monthly increase of $500 and only 3 firms paying either $1,000 or $1,500 more per month. Additionally as discussed above, the Exchange's affiliate C2 has the same fee which is also assessed at the proposed rate and assessed by data source instead of per port. The proposed name change is also appropriate in light of the Exchange's proposed changes and may alleviate potential confusion.

Logical Connectivity

Port Fees

The Exchange believes it's reasonable to eliminate certain fees associated with legacy options for connecting to the Exchange and to replace them with fees associated with new options for connecting to the Exchange that are similar to those offered at its Affiliated Exchanges. In particular, the Exchange believes it's reasonable to no longer assess fees for CMI and FIX Login IDs because the Login IDs were retired and rendered obsolete upon migration and because the Exchange is proposing to replace them with fees associated with the new logical connectivity options. The Exchange believes that it is reasonable to harmonize the Exchange's logical connectivity options and corresponding connectivity fees now that the Exchange is on a common platform as its Affiliated Exchanges. Additionally, the Exchange notes the proposed fees are the same as, or in line with, the fees assessed on its Affiliated Exchanges for similar connectivity.[74] The proposed logical connectivity fees are also equitable and not unfairly

[71] *See e.g.,* Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. 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. *See also* Nasdaq Price List—Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. *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.

[72] *See e.g.,* Affiliated Exchange Fee Schedules, Physical Connectivity Fees. For example, Cboe BZX, Cboe EDGX and C2 each charge a monthly fee of $2,500 for each 1Gb connection and $7,500 for each 10Gb connection.

[73] The Exchange notes the reduction in market participants that pay the data port fee is due to firm consolidations and acquisitions.

[74] *See* Affiliated Exchange Fee Schedules, Logical Port Fees.

discriminatory because the Exchange will apply the same fees to all market participants that use the same respective connectivity options.

The Exchange believes the proposed Logical Port fees are reasonable as it is the same fee for Drop Ports and the first five BOE/FIX Ports that is assessed for CMI and FIX Logins, which the Exchange is eliminating in lieu of logical ports. Additionally, while the proposed ports will be assessed the same monthly fees as current CMI/FIX Login IDs, the proposed logical ports provide for significantly more message traffic. Specifically, the proposed BOE/FIX Logical Ports will provide for 3 times the amount of quoting [75] capacity and approximately 165 times order entry capacity. Similarly, the Exchange believes the proposed BOE Bulk Port fees are reasonable because while the fees are higher than the CMI and FIX Login Id fees and the proposed Logical Port fees, BOE Bulk Ports offer significantly more bandwidth capacity than both CMI and FIX Login Ids and Logical Ports. Particularly, a single BOE Bulk Port offers 45 times the amount of quoting bandwidth than CMI/FIX Login Ids [76] and 5 times the amount of quoting bandwidth than Logical Ports will offer. Additionally, the Exchange believes that its fees for logical connectivity are reasonable, equitable, and not unfairly discriminatory as they are designed to ensure that firms that use the most capacity pay for that capacity, rather than placing that burden on market participants that have more modest needs. Although the Exchange charges a ''per port'' fee for logical connectivity, it notes that this fee is in effect a capacity fee as each FIX, BOE or BOE Bulk port used for order/quote entry supports a specified capacity (*i.e.,* messages per second) in the matching engine, and firms purchase additional logical ports when they require more capacity due to their business needs.

An obvious driver for a market participant's decision to purchase multiple ports will be their desire to send or receive additional levels of message traffic in some manner, either by increasing their total amount of message capacity available, or by segregating order flow for different trading desks and clients to avoid latency sensitive applications from competing for a single thread of resources. For example, a TPH may purchase one or more ports for its market making business based on the amount of message traffic needed to support that business, and then purchase separate ports for proprietary trading or customer facing businesses so that those businesses have their own distinct connection, allowing the firm to send multiple messages into the Exchange's trading system in parallel rather than sequentially. Some TPHs that provide direct market access to their customers may also choose to purchase separate ports for different clients as a service for latency sensitive customers that desire the lowest possible latency to improve trading performance. Thus, while a smaller TPH that demands more limited message traffic may connect through a service bureau or other service provider, or may choose to purchase one or two logical ports that are billed at a rate of $750 per month each, a larger market participant with a substantial and diversified U.S. options business may opt to purchase additional ports to support both the volume and types of activity that they conduct on the Exchange. While the Exchange has no way of predicting with certainty the amount or type of logical ports market participants will in fact purchase post-migration, the Exchange anticipated approximately 16% of TPHs to purchase one to two logical ports, and approximately 22% of TPHs to not purchase any logical ports. To date, 13% of TPHs purchased one to two logical ports and 27% have not purchased any logical ports. At the same time, market participants that desire more total capacity due to their business needs, or that wish to segregate order flow by purchasing separate capacity allocations to reduce latency or for other operational reasons, would be permitted to choose to purchase such additional capacity at the same marginal cost. The Exchange believes the proposal to assess an additional Logical and BOE Bulk port fee for incremental usage per logical port is reasonable because the proposed fees are modestly higher than the proposed Logical Port and BOE Bulk fees and encourage users to mitigate message traffic as necessary. The Exchange notes one of its Affiliated Exchanges has similar implied port fees.[77]

In sum, the Exchange believes that the proposed BOE/FIX Logical Port and BOE Bulk Port fees are appropriate as these fees would ensure that market participants continue to pay for the amount of capacity that they request, and the market participants that pay the most are the ones that demand the most resources from the Exchange. The Exchange also believes that its logical connectivity fees are aligned with the goals of the Commission in facilitating a competitive market for all firms that trade on the Exchange and of ensuring that critical market infrastructure has ''levels of capacity, integrity, resiliency, availability, and security adequate to maintain their operational capability and promote the maintenance of fair and orderly markets.'' [78]

The Exchange believes waiving the FIX/BOE Logical Port fee for one FIX Logical Port used to access PULSe and Silexx (for FLEX Trading) is reasonable because it will allow all TPHs using PULSe and Silexx to avoid having to pay a fee that they would otherwise have to pay. The waiver is equitable and not unfairly discriminatory because TPHs using PULSe are already subject to a monthly fee for the PULSe Workstation, which the Exchange views as inclusive of fees to access the Exchange. Moreover, while PULSe users today do not require a FIX/CMI Login Id, post-migration, due to changes to the connectivity infrastructure, PULSe users will be required to maintain a FIX Logical Port and as such incur a fee they previously would not have been subject to. Similarly, the Exchange believes that the waiver for Silexx (for FLEX trading) will encourage TPHs to transact business using FLEX Options using the new Silexx System and encourage trading of FLEX Options. Additionally, the Exchange notes that it currently waives the Login Id fees for Login IDs used to access the CFLEX system.

The Exchange believes its proposed fee for Purge Ports is reasonable as it is also in line with the amount assessed for purge ports offered by its Affiliated Exchanges, as well as other exchanges.[79] Moreover, the Exchange believes that offering purge port functionality at the Exchange level promotes robust risk management across the industry, and thereby facilitates investor protection. Some market participants, and, in particular, larger firms, could build similar risk functionality on their trading systems that permit the flexible cancellation of orders entered on the Exchange. Offering Exchange level protections however, ensures that such functionality is widely available to all firms, including smaller firms that may otherwise not be willing to incur the costs and development work necessary

[75] Based on the purchase of a single Market-Maker Trading Permit or Bandwidth Packet.

[76] Based on the purchase of a single Market-Maker Trading Permit or Bandwidth Packet.

[77] *See e.g.,* Cboe C2 Options Exchange Fees Schedule, Logical Connectivity Fees.

[78] *See* Securities Exchange Act Release No. 73639 (November 19, 2014), 79 FR 72251 (December 5, 2014) (File No. S7–01–13) (Regulation SCI Adopting Release).

[79] *See* Affiliated Exchange Fee Schedules, Logical Port Fees. *See also,* Nasdaq ISE Pricing Schedule, Section 7(C). ISE charges a fee of $1,100 per month for SQF Purge Ports.

to support their own customized mass cancel functionality. The Exchange operates in a highly competitive market in which exchanges offer connectivity and related services as a means to facilitate the trading activities of TPHs and other participants. As the proposed Purge Ports provide voluntary risk management functionality, excessive fees would simply serve to reduce demand for this optional product. The Exchange also believes that the proposed Purge Port fees are not unfairly discriminatory because they will apply uniformly to all TPHs that choose to use dedicated Purge Ports. The proposed Purge Ports are completely voluntary and, as they relate solely to optional risk management functionality, no TPH is required or under any regulatory obligation to utilize them. The Exchange believes that adopting separate fees for these ports ensures that the associated costs are borne exclusively by TPHs that determine to use them based on their business needs, including Market-Makers or similarly situated market participants. Similar to Purge Ports, Spin and GRP Ports are optional products that provide an alternative means for market participants to receive multicast data and request and receive a retransmission of such data. As such excessive fees would simply serve to reduce demand for these products, which TPHs are under no regulatory obligation to utilize. All TPHs that voluntarily select these service options (*i.e.,* Purge Ports, Spin Ports or GRP Ports) will be charged the same amount for the same respective services. All TPHs have the option to select any connectivity option, and there is no differentiation among TPHs with regard to the fees charged for the services offered by the Exchange.

Access Credits

The Exchange believes the proposal to adopt credits for BOE Bulk Ports is reasonable, equitable and not unfairly discriminatory because it provides an opportunity for TPHs to pay lower fees for logical connectivity. The Exchange notes that the proposed credits are in lieu of the current credits that Market-Makers are eligible to receive today for Trading Permits fees. Although only Market-Makers may receive the proposed BOE Bulk Port credits, Market-Makers are valuable market participants that provide liquidity in the marketplace and incur costs that other market participants do not incur. For example, Market-Makers have a number of obligations, including quoting obligations and fees associated with appointments that other market participants do not have. The Exchange also believes that the proposals provide incremental incentives for TPHs to strive for the higher tier levels, which provide increasingly higher benefits for satisfying increasingly more stringent criteria, including criteria to provide more liquidity to the Exchange. The Exchange believes the value of the proposed credits is commensurate with the difficulty to achieve the corresponding tier thresholds of each program.

First, the Exchange believes the proposed BOE Bulk Port fee credits provided under AVP will incentivize the routing of orders to the Exchange by TPHs that have both Market-Maker and agency operations, as well as incent Market-Makers to continue to provide critical liquidity notwithstanding the costs incurred with being a Market-Maker. More specifically, in the options industry, many options orders are routed by consolidators, which are firms that have both order router and Market-Maker operations. The Exchange is aware not only of the importance of providing credits on the order routing side in order to encourage the submission of orders, but also of the operations costs on the Market-Maker side. The Exchange believes the proposed change to AVP continues to allow the Exchange to provide relief to the Market-Maker side via the credits, albeit credits on BOE Bulk Port fees instead of Trading Permit fees. Additionally, the proposed credits may incentivize and attract more volume and liquidity to the Exchange, which will benefit all Exchange participants through increased opportunities to trade as well as enhancing price discovery. While the Exchange has no way of predicting with certainty how many and which TPHs will satisfy the required criteria to receive the credits, the Exchange had anticipated approximately two TPHs (out of approximately 5 TPHs that are eligible for AVP) to reach VIP Tiers 4 or 5 and consequently earn the BOE Bulk Port fee credits for their respective Market-Maker affiliate. For the month of October 2019, two TPHs received access credits under Tier 5 and no TPHs received credits under Tier 4. The Exchange notes that it believes its reasonable, equitable and not unfairly discriminatory to no longer provider access credits for Market-Makers whose affiliates achieve VIP Tiers 2 or 3 as the Exchange has adopted another opportunity for all Market-Makers, not just Market-Makers that are part of a consolidator, to receive credits on BOE Bulk Port fees (*i.e.,* credits available via the proposed Market-Maker Access Credit Program). More specifically, limiting the credits under AVP to the top two tiers enables the Exchange to provide further credits under the new Market-Maker Access Credit Program. Furthermore, the Exchange notes that it is not required to provide any credits at any tier level.

The Exchange believes the proposed BOE Bulk Port fee credits available for TPHs that reach certain Performance Tiers under the Liquidity Provider Sliding Scale Adjustment Table is reasonable as the credits provide for reduced connectivity costs for those Market-Makers that reach the required thresholds. The Exchange believe it's reasonable, equitable and not unfairly discriminatory to provide credits to those Market-Makers that primarily provide and post liquidity to the Exchange, as the Exchange wants to continue to encourage Market-Makers with significant Make Rates to continue to participate on the Exchange and add liquidity. Greater liquidity benefits all market participants by providing more trading opportunities and tighter spreads.

Moreover, the Exchange notes that Market-Makers with a high Make Rate percentage generally require higher amounts of capacity than other Market-Makers. Particularly, Market-Makers with high Make Rates are generally streaming significantly more quotes than those with lower Make Rates. As such, Market-Makers with high Make Rates may incur more costs than other Market-Makers as they may need to purchase multiple BOE Bulk Ports in order to accommodate their capacity needs. The Exchange believes the proposed credits for BOE Bulk Ports encourages Market-Makers to continue to provide liquidity for the Exchange, notwithstanding the costs incurred by purchasing multiple ports. Particularly, the proposal is intended to mitigate the costs incurred by traditional Market-Makers that focus on adding liquidity to the Exchange (as opposed to those that provide and take, or just take). While the Exchange cannot predict with certainty which Market-Makers will reach Performance Tiers 4 and 5 each month, based on historical performance it anticipated approximately 10 Market-Makers would achieve Tiers 4 or 5. In October 2019, 12 Market-Makers achieved Tiers 4 or 5. Lastly, the Exchange notes that it is common practice among options exchanges to differentiate fees for adding liquidity and fees for removing liquidity.[80]

[80] *See e.g.,* MIAX Options Fees Schedule, Section 1(a), Market Maker Transaction Fees.

Bandwidth Packets and CMI CAS Server Fees

The Exchange believes it's reasonable to eliminate Bandwidth Packet fees and the CMI CAS Server fee because TPHs will not pay fees for these connectivity options and because Bandwidth Packets and CAS Servers have been retired and rendered obsolete as part of the migration. The Exchange believes that even though it will be discontinuing Bandwidth Packets, the proposed incremental pricing for Logical Ports and BOE Bulk Ports will continue to encourage users to mitigate message traffic. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

Access Fees

The Exchange believes the restructuring of its Trading Permits is reasonable in light of the changes to the Exchange's connectivity infrastructure in connection with the migration and the resulting separation of bandwidth allowance, logins and appointment costs from each Trading Permit. The Exchange also believes that it is reasonable to harmonize the Exchange's Trading Permit structure and corresponding connectivity options to more closely align with the structures offered at its Affiliated Exchanges once the Exchange is on a common platform as its Affiliated Exchanges.[81] The proposed Trading Permit structure and corresponding fees are also in line with the structure and fees provided by other exchanges. The proposed Trading Permit fees are also equitable and not unfairly discriminatory because the Exchange will apply the same fees to all market participants that use the same type and number of Trading Permits.

With respect to electronic Trading Permits, the Exchange notes that TPHs previously requested multiple Trading Permits because of bandwidth, login or appointment cost needs. As described above, in connection with migration, bandwidth, logins and appointment costs are no longer tied to Trading Permits or Bandwidth Packets and as such, the need to hold multiple permits and/or Bandwidth Packets is obsolete. As such, the Exchange believes the structure to require only one of each type of applicable electronic Trading Permit is appropriate. Moreover, the Exchange believes offering separate marketing making permits for off-floor and on-floor Market-Makers provides for a cleaner, more streamlined approach to trading permits and corresponding fees. Other exchanges similarly provide separate and distinct fees for Market-Makers that operate on-floor vs off-floor and their corresponding fees are similar to those proposed by the Exchange.[82]

The Exchange believes the proposed fee for its MM EAP Trading Permits is reasonable as it is the same fee it assess today for Market-Maker Trading Permits (*i.e.,* $5,000 per month per permit). Additionally, the proposed fee is in line with, and in some cases even lower than, the amounts assessed for similar access fees at other exchanges, including its affiliate C2.[83] The Exchange believes the proposed EAP fee is also reasonable, and in line with the fees assessed by other Exchanges for non-Market-Maker electronic access.[84] The Exchange notes that while the Trading Permit fee is increasing, TPHs overall cost to access the Exchange may be reduced in light of the fact that a TPH no longer must purchase multiple Trading Permits, Bandwidth Packets and Login Ids in order to receive sufficient bandwidth and logins to meet their respective business needs. To illustrate the value of the new connectivity infrastructure, the Exchange notes that the cost that would be incurred by a TPH today in order to receive the same amount of order capacity that will be provided by a single Logical Port post-migration (*i.e.,* 5,000 orders per second), is approximately 98% higher than the cost for the same capacity post-migration. The following examples further demonstrate potential cost savings/value added for an EAP holder with modest capacity needs and an EAP holder with larger capacity needs:

TPH THAT HOLDS 1 EAP, NO BANDWIDTH PACKETS AND 1 CMI LOGIN

	Current fee structure	Post-migration fee structure
EAP	$1,600	$3,000.
CMI Login/Logical Port	$750	$750.
Bandwidth Packets	0	N/A.
Total Bandwidth Available	30 orders/sec	5,000 orders/sec.
Total Cost	$2,350	$3,750.
Total Cost per message	$78.33/order/sec	$0.75/order/sec.

TPH THAT HOLDS 1 EAP, 4 BANDWIDTH PACKETS AND 15 CMI LOGINS

	Current fee structure	Post-migration fee structure
EAP	$1,600	$3,000.
CMI Login/Logical Port	$11,250 (15@750)	$750.
Bandwidth Packets	$6,400 (4@$1,600)	N/A.
Total Bandwidth Available	150 orders/sec	5,000 orders/sec.
Total Cost	$19,250	$3,750.
Total Cost per message	$128.33/order/sec	$0.75/order/sec.

[81] For example, the Exchange's affiliate, C2, similarly provides for Trading Permits that are not tied to connectivity, and similar physical and logical port options at similar pricings. *See* Cboe C2 Options Exchange Fees Schedule. Physical connectivity and logical connectivity are also not tied to any type of permits on the Exchange's other options exchange affiliates.

[82] *See e.g.,* PHLX Section 8A, Permit and Registration Fees. *See also,* BOX Options Fee Schedule, Section IX Participant Fees; NYSE American Options Fees Schedule, Section III(A) Monthly ATP Fees and NYSE Arca Options Fees and Charges, OTP Trading Participant Rights. For similar Trading Floor Permits for Floor Market Makers, Nasdaq PHLX charges $6,000; BOX charges up to $5,500 for 3 registered permits in addition to a $1,500 Participant Fee, NYSE Arca charges up to $6,000; and NYSE American charges up to $8,000.

[83] *See e.g.,* Cboe C2 Options Exchange Fees Schedule. *See also,* NYSE Arca Options Fees and Charges, General Options and Trading Permit (OTP) Fees, which assesses up to $6,000 per Market Maker OTP and NYSE American Options Fee Schedule, Section III. Monthly ATP Fees, which assess up to $8,000 per Market Maker ATP. *See also,* PHLX Section 8A, Permit and Registration Fees, which assesses up to $4,000 per Market Maker Permit.

[84] *See e.g.,* PHLX Section 8A, Permit and Registration Fees, which assesses up to $4,000 per Permit for all member and member organizations other than Floor Specialists and Market Makers.

The Exchange believes the proposal to adopt a new Clearing TPH Permit is reasonable because it offers TPHs that only clear transactions of TPHs a discount. Particularly, Clearing TPHs that also submit orders electronically to the Exchange would purchase the proposed EAP at $3,000 per permit. The Exchange believe it's reasonable to provide a discount to Clearing TPHs that only clear transactions and do not otherwise submit electronic orders to the Exchange. The Exchange notes that another exchange similarly charges a separate fee for clearing firms.[85]

The Exchange believes the proposed fee structure for on-floor Market-Makers is reasonable as the fees are in line with those offered at other Exchanges.[86] The Exchange believes that the proposed fee for MM Floor Permits as compared to MM EAPs is reasonable because it is only modestly higher than MM EAPs and Floor MMs don't have other costs that MM EAP holders have, such as MM EAP Appointment fees.

The Exchange believes its proposed fees for Floor Broker Permits are reasonable because the fees are similar to, and in some cases lower than, the fees the Exchange currently assesses for such permits. Specifically, based on the number of Trading Permits TPHs held upon migration, 60% of TPHs that hold Floor Broker Trading Permits will pay lower Trading Permit fees. Particularly, any Floor Broker holding ten or less Floor Broker Trading Permits will pay lower fees under the proposed tiers as compared to what they pay today. While the remaining 40% of TPHs holding Floor Broker Trading Permits (who each hold between 12–21 Floor Broker Trading Permits) will pay higher fees, the Exchange notes the monthly increase is de minimis, ranging from an increase of 0.6%–2.72%.[87]

The Exchange believes the proposed ADV Discount is reasonable because it provides an opportunity for Floor Brokers to pay lower FB Trading Permit fees, similar to the current rebate program offered to Floor Brokers. The Exchange notes that while the new ADV Discount program includes only customer volume (''C'' origin code) as compared to Customer and Professional Customer/Voluntary Professional, the amount of Professional Customer/ Voluntary Professional volume was de minimis and the Exchange does not believe the absence of such volume will have a significant impact.[88] Additionally, the Exchange notes that while the ADV requirements under the proposed ADV Discount program are higher than are required under the current rebate program, the proposed ADV Discount counts volume from all products towards the thresholds as compared to the current rebate program which excludes volume from Underlying Symbol List A (except RLG, RLV, RUI, and UKXM), DJX, XSP, and subcabinet trades. Moreover, the ADV Discount is designed to encourage the execution of orders in all classes via open outcry, which may increase volume, which would benefit all market participants (including Floor Brokers who do not hit the ADV thresholds) trading via open outcry (and indeed, this increased volume could make it possible for some Floor Brokers to hit the ADV thresholds). The Exchange believes the proposed discounts are equitable and not unfairly discriminatory because all Floor Brokers are eligible. While the Exchange has no way of predicting with certainty how many and which TPHs will satisfy the various thresholds under the ADV Discount, the Exchange anticipated approximately 3 Floor Brokers to receive a rebate under the program. To date, 2 Floor Brokers have received a rebate under the program.

The Exchange believes its proposed MM EAP Appointment fees are reasonable in light of the Exchange's elimination of appointment costs tied to Trading Permits. Other exchanges also offer a similar structure with respect to fees for appointment classes.[89] Additionally, the proposed MM EAP Appointment fee structure results in approximately 36% electronic MMs paying lower fees for trading permit and appointment costs. For example, in order to have the ability to make electronic markets in every class on the Exchange, a Market-Maker would need 1 Market-Maker Trading Permit and 37 Appointment Units post-migration. Under, the current pricing structure, in order for a Market-Maker to quote the entire universe of available classes, a Market-Maker would need 33 Appointment Credits, thus necessitating 33 Market-Maker Trading Permits. With respect to fees for Trading Permits and Appointment Unit Fees, under the proposed pricing structure, the cost for a TPH wishing to quote the entire universe of available classes is approximately 29% less (if they are not eligible for the MM TP Sliding Scale) or approximately 2% less (if they are eligible for the MM TP Sliding Scale). To further demonstrate the potential cost savings/value added, the Exchange is providing the following examples comparing current Market-Maker connectivity and access fees to projected connectivity and access fees for different scenarios. The Exchange notes that the below examples not only compare Trading Permit and Appointment Unit costs, but also the cost incurred for logical connectivity and bandwidth. Particularly, the first example demonstrates the total minimum cost that would be incurred today in order for a Market-Maker to have the same amount of capacity as a Market-Maker post-migration that would have only 1 MM EAP and 1 Logical Port (*i.e.,* 15,000 quotes/3 sec). The Exchange is also providing examples that demonstrate the costs of (i) a Market-Maker with small capacity needs and appointment unit of 1.0 and (ii) a Market-Maker with large capacity needs and appointment cost/unit of 30.0:

MARKET-MAKER THAT NEEDS CAPACITY OF 15,000/QUOTES/3 SECONDS

	Current fee structure	Post-migration fee structure
MM Permit/MM EAP	$5,000	$5,000.
Appointment Unit Cost	N/A (1 appointment cost)	$0 (1 appointment unit).
CMI Login/Logical Port	$750 [90]	$750.
Bandwidth Packets	$5,500 (2@$2,750)	N/A.
Total Bandwidth Available	15,000 quotes/3 sec	15,000 quotes/3 sec.
Total Cost	$11,250	$5,750.

[85] *See e.g.,* NYSE Arca Options Fees and Charges, General Options and Trading Permit (OTP) Fees and NYSE American Options Fee Schedule, Section III. Monthly ATP Fees.

[86] *See e.g.,* PHLX Section 8A, Permit and Registration Fees, which assesses $6,000 per permit for Floor Specialists and Market Makers.

[87] The Floor Brokers whose fees are increasing have each committed to a minimum number of permits and therefore currently receive the rates set forth in the current Floor Broker TP Sliding Scale.

[88] Furthermore, post-migration the Exchange will not have Voluntary Professionals.

[89] *See e.g.,* PHLX Section 8. Membership Fees, B, Streaming Quote Trader (''SQT'') Fees and C. Remote Market Maker Organization (RMO) Fee.

[90] The maximum quoting bandwidth that may be applied to a single Login Id is 80,000 quotes/3 sec.

MARKET-MAKER THAT NEEDS CAPACITY OF 15,000/QUOTES/3 SECONDS—Continued

	Current fee structure	Post-migration fee structure
Total Cost per message allowed	$0.75/quote/3 sec	$0.38/quote/3 sec.

MARKET MAKER THAT NEEDS CAPACITY OF NO MORE THAN 5,000 QUOTES/3 SECS

	Current fee structure	Post-migration fee structure
MM Permit/MM EAP	$5,000	$5,000.
Appointment Unit Cost	N/A (1 appointment cost)	$0 (1 appointment unit).
CMI Login/Logical Port	$750	$750.
Bandwidth Packets	0	N/A.
Total Bandwidth Available	5,000 quotes/3 sec	15,000 quotes/3 sec.
Total Cost	$5,750	$5,750.
Total Cost per message allowed	$1.15/quote/3 sec	$0.38/quote/3 sec.

MARKET-MAKER THAT NEEDS 30 APPOINTMENT UNITS AND CAPACITY OF 300,000 QUOTES/3 SEC

	Current fee structure	Post-migration fee structure
MM Permits/MM EAP	$105,000 (30 MM Permits assumes eligible for MM TP Sliding Scale) [91].	$5,000.
Appointment Units Cost	N/A (30 appointment costs)	$95,500 (30 appointment units).
CMI Logins/BOE Bulk Port	$3,000 (4@$750) [92]	$3,000 (2 BOE Bulk@$1,500).
Bandwidth Packets	$82,500 (30@$2750)	N/A.
Total Bandwidth Available	300,000 quotes/3 sec	450,000 quotes/3 sec. *
Total Cost	$190,500	$103,500.
Total Cost per message allowed	$0.63/quotes/3 sec	$0.23/quote/3 sec.

* Possible performance degradation at 15,000 messages per second.

The Exchange believes its proposal to provide separate fees for Tier Appointments for MM EAPs and MM Floor Permits as the Exchange will be issuing separate Trading Permits for on-floor and off-floor market making as discussed above. The proposal to eliminate the volume threshold for the electronic SPX Tier Appointment fee is reasonable as no TPHs in the past several months have electronically traded more than 1 SPX contract or less than 100 SPX contracts per month and therefore will not be negatively impacted by the proposed change, and because it aligns the electronic SPX Tier Appointment with the floor SPX Tier Appointment, which has no volume threshold. The Exchange believes the proposal to increase the electronic volume thresholds for VIX and RUT are reasonable as those that do not regularly trade VIX or RUT in open-outcry will continue to not be assessed the fee. In fact, any TPH that executes more than 100 contracts but less than 1,000 in the respective classes will no longer have to pay the proposed Tier Appointment fee. As noted above, the Exchange is not proposing to change the amounts assessed for each Tier Appointment Fee. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

Trading Permit Holder Regulatory Fee

The Exchange believes it's reasonable to eliminate the Trading Permit Holder Regulatory fee because TPHs will not pay this fee and because the Exchange is restructuring its Trading Permit structure. The Exchange notes that although it will less closely be covering the costs of regulating all TPHs and performing its regulatory responsibilities, it still has sufficient funds to do so. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

The Exchange believes corresponding changes to eliminate obsolete language in connection with the proposed changes described above and to relocate and reorganize its fees in connection with the proposed changes maintain clarity in the Fees Schedule and alleviate potential confusion, thereby removing impediments to and perfecting the mechanism of a free and open market and a national market system, and, in general, protecting investors and the public interest.

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

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

With respect to intra-market competition, the Exchange does not believe that the proposed rule change would place certain market participants at the Exchange at a relative disadvantage compared to other market participants or affect the ability of such market participants to compete. As stated above, the Exchange does not believe its proposed pricing will impose a barrier to entry to smaller participants and notes that its proposed connectivity pricing is associated with relative usage of the various market participants. For example, market participants with modest capacity needs can buy the less expensive 1 Gb Physical Port and utilize only one Logical Port. Moreover, the pricing for 1 Gb Physical Ports and FIX/BOE Logical Ports are no different than are assessed today (*i.e.,* $1,500 and $750 per port, respectively), yet the capacity and access associated with each is greatly increasing. While pricing may be increased for larger capacity physical and logical ports, such options provide far more capacity and are purchased by those that consume more resources from the network. Accordingly, the proposed

[91] For simplicity of the comparison, this assumes no appointments in SPX, VIX, RUT, XEO or OEX (which are not included in the TP Sliding Scale).

[92] Given the bandwidth limit per Login Id of 80,000 quotes/3 sec, example assumes Market-Maker purchases minimum amount of Login IDs to accommodate 300,000 quotes/3 sec.

connectivity fees do not favor certain categories of market participants in a manner that would impose a burden on competition; rather, the allocation reflects the network resources consumed by the various size of 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 Exchange also does not believe that the proposed rule change will result in any burden on inter-market competition that is not necessary or appropriate in furtherance of the purposes of the Act. As discussed in the Statutory Basis section above, options market participants are not forced to connect to (or purchase market data from) all options exchanges, as shown by the number of TPHs at Cboe and shown by the fact that there are varying number of members across each of Cboe's Affiliated Exchanges. The Exchange operates in a highly competitive environment, and its ability to price access and connectivity is constrained by competition among exchanges and third parties. As discussed, there are other options markets of which market participants may connect to trade options. There is also a possible range of alternative strategies, including routing to the exchange through another participant or market center or taking the exchange's data indirectly. For example, there are 15 other U.S. options exchanges, which the Exchange must consider in its pricing discipline in order to compete for market participants. In this competitive environment, market participants are free to choose which competing exchange or reseller to use to satisfy their business needs. As a result, the Exchange believes this proposed rule change permits fair competition among national securities exchanges. Accordingly, the Exchange does not believe its proposed fee change imposes any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

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

The Exchange neither solicited nor received written comments on the proposed rule change.

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) of the Act [93] and paragraph (f) of Rule 19b–4 [94] 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 will institute proceedings to determine whether the proposed rule change 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:

Electronic Comments

• Use the Commission's internet comment form (*http://www.sec.gov/rules/sro.shtml*); or

• Send an email to *rule-comments@sec.gov.* Please include File Number SR–CBOE–2020–005 on the subject line.

Paper Comments

• Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549–1090.

All submissions should refer to File Number SR–CBOE–2020–005. This file number should be included on the subject line if email 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 website (*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 such filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–CBOE–2020–005, and should be submitted on or before March 10, 2020.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[95]

J. Matthew DeLesDernier,

Assistant Secretary.

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[93] 15 U.S.C. 78s(b)(3)(A).

[94] 17 CFR 240.19b–4(f).

[95] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–88174; File No. SR–BX–2020–001]

Self-Regulatory Organizations; Nasdaq BX, Inc.; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Remove Listing Rule and Other Amendments

February 11, 2020.

Pursuant to 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 January 29, 2020, Nasdaq BX, Inc. (''BX'' or ''Exchange'') filed with the Securities and Exchange Commission (''SEC'' or ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

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

The Exchange proposes to amend Options 1, Section 1 (Definitions), Options 2, Section 4 (Obligations of Market Makers and Lead Market Makers), Section 5 (Market Maker Quotations), Options 3, Section 2 (Units of Trading and Meaning if Premium Quotes and Orders), Options 3, Section 3 (Minimum Increments), Options 3, Section 8 (Opening and Halt Cross), Options 3, Section 19 (Mass Cancellation of Trading Interest), Options 4, Section 5 (Series of Options

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

[2] 17 CFR 240.19b–4.