

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-101017; File No. SR-CboeBYX-2024-032)

September 12, 2024

Self-Regulatory Organizations; Cboe BYX Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change to Amend its Fees Schedule Related to Physical Port Fees

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 August 29, 2024, Cboe BYX Exchange, Inc. (the “Exchange” or “BYX”) filed with the Securities and Exchange Commission (“Commission”) the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

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

Cboe BYX Exchange, Inc. (the “Exchange” or “BYX Equities”) proposes to amend its Fees Schedule. 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://markets.cboe.com/us/equities/regulation/rule_filings/BYX/), 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

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

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

1. Purpose

The Exchange proposes to amend its fee schedule relating to physical connectivity fees.³

By way of background, a physical port is utilized by a Member or non-Member to connect to the Exchange at the data centers where the Exchange’s servers are located. The Exchange currently assesses the following physical connectivity fees for Members and non-Members on a monthly basis: \$2,500 per physical port for a 1 gigabit (“Gb”) circuit and \$7,500 per physical port for a 10 Gb circuit. The Exchange proposes to increase the monthly fee for 10 Gb physical ports from \$7,500 to \$8,500 per port. The Exchange notes the proposed fee change better enables it to continue to maintain and improve its market technology and services and also notes that the proposed fee amount, even as amended, continues to be in line with, or even lower than, amounts assessed by other exchanges for similar connections.⁴ The Exchange also notes

³ The Exchange initially filed the proposed fee changes on July 3, 2023 (SR-CboeBYX-2023-010). On September 1, 2023, the Exchange withdrew that filing and submitted SR-CboeBYX-2023-013. On September 29, 2023, the Securities and Exchange Commission issued a Suspension of and Order Instituting Proceedings to Determine whether to Approve or Disapprove a Proposed Rule Change to Amend its Fees Schedule Related to Physical Port Fees (the “OIP”) in anticipation of a possible U.S. government shutdown. On September 29, 2023, the Exchange filed the proposed fee change (SR-CboeBYX-2023-014). On October 13, 2023, the Exchange withdrew that filing and submitted SR-CboeBYX-2023-015. On December 12, 2023, Exchange filed the proposed fee change (SR-CboeBYX-2023-018). On December 12, 2023, the Exchange withdrew that filing and submitted SR-CboeBYX-2023-019. On February 9, 2024, the Exchange withdrew that filing and submitted SR-CboeBYX-2024-006. On April 9, 2024, the Exchange withdrew that filing and submitted SR-Cboe-BYX-2024-012. On June 7, 2024, the Exchange withdrew that filing and submitted SR-CboeBYX-2024-021. On August 29, 2024, the Exchange withdrew that filing and submitted this filing.

⁴ See e.g., The Nasdaq Stock Market LLC (“Nasdaq”), General 8, Connectivity to the Exchange. Nasdaq and its affiliated exchanges charge a monthly fee of \$15,000 for each 10Gb Ultra fiber connection to the respective exchange, which is analogous to the Exchange’s 10Gb physical port. See also New York Stock Exchange LLC, NYSE American LLC, NYSE Arca, Inc., NYSE Chicago Inc., NYSE National, Inc. Connectivity Fee Schedule, which provides that 10 Gb LX LCN Circuits (which are analogous to the Exchange’s 10 Gb physical port) are assessed \$22,000 per month, per port.

that a single 10 Gb physical port can be used to access the Systems of the following affiliate exchanges: the Cboe BZX Exchange, Inc. (options and equities), Cboe EDGX Exchange, Inc. (options and equities platforms), Cboe EDGA Exchange, Inc., and Cboe C2 Exchange, Inc., (“Affiliate Exchanges”).⁵ Notably, only one monthly fee currently (and will continue) to apply per 10 Gb physical port regardless of how many affiliated exchanges are accessed through that one port.⁶

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.⁷ Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)⁸ 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 the Section 6(b)(5)⁹ requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers. The Exchange also

⁵ The Affiliate Exchanges are also submitting contemporaneous identical rule filings.

⁶ The Exchange notes that conversely, other exchange groups charge separate port fees for access to separate, but affiliated, exchanges. See e.g., Securities and Exchange Release No. 99822 (March 21, 2024), 89 FR 21337 (March 27, 2024) (SR-MIAX-2024-016).

⁷ 15 U.S.C. 78f(b).

⁸ 15 U.S.C. 78f(b)(5).

⁹ Id.

believes the proposed rule change is consistent with Section 6(b)(4)¹⁰ of the Act, which requires that Exchange rules provide for the equitable allocation of reasonable dues, fees, and other charges among its Members and other persons using its facilities.

The Exchange operates in a highly competitive environment. On May 21, 2019, the SEC Division of Trading and Markets issued non-rulemaking fee filing guidance titled “Staff Guidance on SRO Rule Filings Relating to Fees” (“Fee Guidance”), which provided, among other things, that in determining whether a proposed fee is constrained by significant competitive forces, the Commission will consider whether there are reasonable substitutes for the product or service that is the subject of a proposed fee.¹¹ As described in further detail below, the Exchange believes substitutable products¹² are in fact available to market participants, including by third-party resellers of the Exchange’s physical connectivity, and the availability to trade all of the products offered at the Exchange at one of the 16 other equities exchanges that trade equities or other off-exchange trading platforms.

The 2019 Fee Guidance also acknowledged that platform competition may demonstrate a competitive environment and therefore constrain aggregate returns, regardless of the pricing of individual products, and that platforms often have joint products.¹³ Exchanges themselves are platforms.¹⁴ Particularly, exchanges are multi-sided platforms that facilitate interactions between

¹⁰ 15 U.S.C. 78f(b)(4).

¹¹ See Chairman Jay Clayton, Statement on Division of Trading and Markets Staff Fee Guidance, June 12, 2019 (“Fee Guidance”). The Fee Guidance also recognized that “products need to be substantially similar but not identical to be substitutable.”

¹² A substitute, or substitutable good, in economics and consumer theory refers to a product or service that consumers see as essentially the same or similar-enough to another product.
See <https://www.investopedia.com/terms/s/substitute.asp>.

¹³ See Fee Guidance.

¹⁴ The *Supreme Court in Ohio v. American Express Co.* recognized that, as platforms facilitate transactions between two or more sides of a market, their value is dependent on attracting users to both sides of the platform (i.e., network effects). See *Ohio v. American Express Co.* 138 S. Ct. 2274, 585 U.S. ____ (2018).

multiple sides of the market—buyers and sellers, companies and investors, and traders and market watchers—and their value is dependent on attracting users to the multiple sides of the platform. As described in further detail below, the Exchange believes that competition among exchanges as trading platforms (and between exchanges and alternative trading venues) constrain exchanges from charging excessive fees for any exchange products, including trading, listings, connectivity and market data. As such, fees need not be analyzed from only one side, but rather can, and should, be considered within the larger context of the platform to test for anti-competitive behavior. And indeed, nothing in the Exchange Act requires the individual examination of specific product fees in isolation. Rather, the Exchange generally requires the rules of an exchange to provide for the “equitable allocation of reasonable dues, fees and other charges among members and issuers and other persons using its facilities.”¹⁵ The Exchange also notes that Congress has directed the Commission to “rely on ‘competition, whenever possible, in meeting its regulatory responsibilities for overseeing the’ self-regulatory organizations (“SROs”) “and the national market system.”¹⁶ This is the basis for the congressional presumption that exchanges’ pricing decisions are constrained by competitive forces and should not be impaired by excessive regulatory scrutiny or rules. Following this mandate, the Commission and the courts have repeatedly expressed their preference for competition over regulatory intervention to determine prices, products, and services in the securities markets. This notion is further supported by the Dodd-Frank amendments authorizing immediately effective fees, not just for transactional pricing, but for market data and other products as well.¹⁷ For the reasons described

¹⁵ See 15 U.S.C. 78f(b)(4).

¹⁶ *NetCoalition v. SEC*, 715 F.3d 342, 534-35 (D.C. Cir. 2013); see also H.R. Rep. No. 94-229 at 92 (1975) (“[I]t is the intent of the conferees that the national market system evolve through the interplay of competitive forces as unnecessary regulatory restrictions are removed.”).

¹⁷ 15 U.S.C. 78s(b)(3)(A).

further below, the Exchange believes that the Proposal supports competition, and therefore the proposed fees are reasonable and equitably allocated. Indeed, the Exchange believes the considerable amount of data both qualitative and quantitative, discussed below not only meets the Exchange’s burden demonstrating that the proposed rule change is consistent with the Exchange but goes beyond the type of reasoned evidence that the courts and the Commission have invited exchanges to submit in support of proposed fee changes.

The Exchange also believes the proposed fee change is reasonable as it reflects a moderate increase in physical connectivity fees for 10 Gb physical ports. First, the Exchange believes its proposal is reasonable as its offering, even as amended, continues to be more affordable as compared to similar offerings at competitor exchanges.¹⁸ The Exchange also notes that the current 10 Gb physical port fee has remained unchanged since June 2018.¹⁹ Since its last increase over 6 years ago however, there has been notable inflation and indeed, the proposed rate is below the rates of inflation as measured by either the Consumer Product Index (“CPI”)²⁰ or the Producer Price Index (“PPI”).²¹ Particularly, under the CPI, the dollar has had an average

¹⁸ See e.g., The Nasdaq Stock Market LLC (“Nasdaq”), General 8, Connectivity to the Exchange. Nasdaq and its affiliated exchanges charge a monthly fee of \$15,000 for each 10Gbps Ultra fiber connection to the respective exchange, which is analogous to the Exchange’s 10Gbps physical port. See also New York Stock Exchange LLC, NYSE American LLC, NYSE Arca, Inc., NYSE Chicago Inc., NYSE National, Inc. Connectivity Fee Schedule, which provides that 10 Gbps LX LCN Circuits (which are analogous to the Exchange’s 10 Gbps physical port) are assessed \$22,000 per month, per port.

¹⁹ See Securities and Exchange Release No. 83441 (June 14, 2018), 83 FR 28684 (June 20, 2018) (SR-CboeBYX-2018-006).

²⁰ The Consumer Price Index (“CPI”) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. The CPI represents all goods and services purchased for consumption by the reference population (U or W). The Bureau of Labor Statistics (“BLS”) has classified all expenditure items into more than 200 categories, arranged into eight major groups (food and beverages, housing, apparel, transportation, medical care, recreation, education and communication, and other goods and services). Included within these major groups are various government-charged user fees, such as water and sewerage charges, auto registration fees, and vehicle tolls. See <https://www.bls.gov/cpi/questions-and-answers.htm>.

²¹ The PPI is a family of indexes that measures the average change over time in selling prices received by domestic producers of goods and services. PPIs measure price change from the perspective of the seller. This contrasts with other measures, such as the Consumer Price Index (CPI), that measure price change

inflation rate of 3.80% per year between 2018 and today, producing a cumulative price increase of approximately 25% inflation since the fee for the 10 Gb physical port was last modified.²² Moreover, a more specific and pertinent gauge of inflation—the PPI for data processing, hosting and related services, active services pages, and other IT infrastructure provisioning services—increased approximately 15% from 2018 to 2024.²³ Both the CPI and the PPI are considered “key data releases, meaning the monthly indicator is heavily scrutinized by traders, since they are used by the Federal Reserve to assess developments in the economy.”²⁴ Further, the Employment Cost Index (“ECI”), which measures the change in the hourly labor cost to employers over time, produced a cumulative price increase of approximately 25%.²⁵ Notwithstanding such significant inflation, the Exchange has not increased its connectivity fees during this time, thereby eroding the value of the revenue it collects through such fees.²⁶ The proposed fee represents approximately 13% increase from the current fee, which is far below the rate of inflation as measured by the CPI and on par with (and even lower than) the rate of inflation as measured by

from the purchaser's perspective. See <https://www.bls.gov/ppi/overview.htm>.

²² See <https://www.officialdata.org/us/inflation/2010?amount=1> (As of August 14, 2024).

²³ See <https://data.bls.gov/timeseries/PCU5182105182105> (As of August 13, 2024). Among the industry-specific PPIs is for North American Industry Classification System (“NAICS”) Code 518210: “Data Processing, Hosting and Related Services: Hosting, Active Server Pages (ASP), and Other Information Technology (IT) Infrastructure Provisioning Services,” NAICS index codes categorize products and services that are common to particular industries. According to BLS, these codes “provide comparability with a wide assortment of industry-based data for other economic programs, including productivity, production, employment, wages, and earnings.” See <https://www.bls.gov/ppi/overview.htm>. BLS describes NAICS 51820 as follows: “The primary output of NAICS 518210 is the provision of electronic data processing services. In the broadest sense, computer services companies help their customers efficiently use technology. The processing services market consists of vendors who use their own computer systems—often utilizing proprietary software—to process customers’ transactions and data. Companies that offer processing services collect, organize, and store a customer’s transactions and other data for record-keeping purposes.”

²⁴ See <https://www.cmegroup.com/education/courses/learn-about-key-economic-events/understanding-consumer-price-index-and-producer-price-index.html>.

²⁵ See <https://www.bls.gov/eci/tables.html> (As of August 13, 2024).

²⁶ Unregulated competitors providing connectivity and co-location services often have annual price increases written into their agreements with customers to account for inflation and rising costs.

the PPI and ECI since 2018. Although the Exchange believes it would be reasonable to increase fees by an amount equal to the full rates of inflation, however measured, to reestablish the initial value of the revenues it earns through its fees, the Exchange does not propose to do this, as the Exchange is sensitive to the sticker shock that would occur if the Exchange raised its fees by 25%. Instead, the Exchange proposes a 13% increase, an amount that the Exchange believes to be reasonable on its face as it is significantly less than various measures of inflation discussed above.

The Exchange believes further that it is reasonable to increase its fees to compensate for inflation because, over time, inflation has degraded the value of each dollar that the Exchange collects in fees, such that the real revenue collected today is considerably less than that same revenue collected in 2018. The impact of this inflationary effect is also independent of any change in the Exchange's costs in providing its goods and services. The Exchange believes that it is reasonable for it to offset, in part, this erosion in the value of the revenues it collects.

Additionally, the Exchange historically does not increase fees every year, notwithstanding inflation. Accordingly, the Exchange believes the proposed fee of \$8,500 is reasonable as it only represents an approximate 13% increase from the rate adopted six years ago, notwithstanding the cumulative inflation rates noted above. Were the Exchange to adjust fully for inflation under the CPI, it would be proposing a monthly rate of \$9,360, which is 10% *more* than the Exchange is actually proposing. To further demonstrate, the Exchange notes that \$8,500 in 2024 is equivalent to approximately \$6,800 in 2018, when adjusted for inflation. Accordingly, the Exchange believes the proposed rate is also reasonable as it is nearly 20% *lower* than the rate adopted in 2018 (i.e., \$7,500) when adjusted for inflation. The Exchange is also unaware of any standard

that suggests any fee proposal that exceeds a certain yearly or cumulative inflation rate is unreasonable, and in any event, in this instance the increase is well below the cumulative rate.

The Exchange also notes Members and non-Members will continue to choose the method of connectivity based on their specific needs and no broker-dealer is required to become a Member of, let alone connect directly to, the Exchange. There is also no regulatory requirement that any market participant connect to any one particular exchange. Market participants may voluntarily choose to become a member of one or more of a number of different exchanges, of which, the Exchange is but one choice. Additionally, any Exchange member that is dissatisfied with the proposal is free to choose not to be a member of the Exchange and send order flow to another exchange. Moreover, direct connectivity is not a requirement to participate on the Exchange. The Exchange also believes substitutable products and services are available to market participants, including, among other things, other equities exchanges that a market participant may connect to in lieu of the Exchange, indirect connectivity to the Exchange via a third-party reseller of connectivity, and/or trading of any equities product, such as within the Over-the-Counter (OTC) markets which do not require connectivity to the Exchange. Indeed, there are currently 16 registered equities exchanges that trade equities (12 of which are not affiliated with Cboe), some of which have similar or lower connectivity fees.²⁷ Based on publicly available information, no single equities exchange has more than approximately 15% of the market share.²⁸ Further, low barriers to entry mean that new exchanges may rapidly enter the market and offer additional substitute platforms to further compete with the Exchange and the products it offers. For example, in 2020 alone, three new exchanges entered the market: Long

²⁷ Id.

²⁸ See Cboe Global Markets, U.S. Equities Market Volume Summary, Month-to-Date (June 6, 2024), available at https://www.cboe.com/us/equities/market_statistics/.

Term Stock Exchange (LTSE), Members Exchange (MEMX), and Miami International Holdings (MIAX Pearl).

As noted above, there is no regulatory requirement that any market participant connect to any one equities exchange, nor 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 equities exchange whose membership includes every registered broker-dealer. By way of example, as of April 2024 Cboe BYX has 110 members that trade equities, Cboe EDGX has 124 members that trade equities, Cboe EDGA has 103 members and Cboe BZX has 132 members. There is also no firm that is a Member of the Exchange only. Further, based on publicly available information regarding a sample of the Exchange's competitors, NYSE has 143 members²⁹, IEX has 129 members³⁰, and MIAX Pearl has 51 members.³¹

A market participant may also submit orders to the Exchange via a Member broker or a third-party reseller of connectivity. The Exchange notes that third-party non-Members also resell exchange connectivity. This indirect connectivity is another viable alternative for market participants to trade on the Exchange without connecting directly to the Exchange (and thus not pay the Exchange connectivity fees), which alternative is already being used by non-Members and further constrains the price that the Exchange is able to charge for connectivity to its Exchange.³² The Exchange notes that it could, but chooses not to, preclude market participants

²⁹ See <https://www.nyse.com/markets/nyse/membership>.

³⁰ See <https://www.iexexchange.io/membership>.

³¹ See https://www.miaxglobal.com/sites/default/files/page-files/20230630_MIAX_Pearl_Equities_Exchange_Members_June_2023.pdf.

³² Third-party resellers of connectivity play an important role in the capital markets infrastructure ecosystem.

from reselling its connectivity. Unlike other exchanges, the Exchange also chooses not to adopt fees that would be assessed to third-party resellers on a per customer basis (i.e., fee based on number of Members that connect to the Exchange indirectly via the third-party).³³ Particularly, these third-party resellers may purchase the Exchange's physical ports and resell access to such ports either alone or as part of a package of services. The Exchange notes that multiple Members are able to share a single physical port (and corresponding bandwidth) with other non-affiliated Members if purchased through a third-party re-seller.³⁴ This allows resellers to mutualize the costs of the ports for market participants and provide such ports at a price that may be lower than the Exchange charges due to this mutualized connectivity. These third-party sellers may also provide an additional value to market participants in addition to the physical port itself as they may also manage and monitor these connections, and clients of these third-parties may also be able to connect from the same colocation facility either from their own racks or using the third-party's managed racks and infrastructure which may provide further cost-savings. The Exchange believes such third-party resellers may also use the Exchange's connectivity as an incentive for market participants to purchase further services such as hosting services. That is, even firms that

For example, third-party resellers can help unify access for customers who want exposure to multiple financial markets that are geographically dispersed by establishing connectivity to all of the different exchanges, so the customers themselves do not have to. Many of the third-party connectivity resellers also act as distribution agents for all of the market data generated by the exchanges as they can use their established connectivity to subscribe to, and redistribute, data over their networks. This may remove barriers that infrastructure requirements may otherwise pose for customers looking to access multiple markets and real-time data feeds. This facilitation of overall access to the marketplace is ultimately beneficial for the entire capital markets ecosystem, including the Exchange, on which such firms transact business.

³³ See, e.g., Nasdaq Price List – U.S. Direct Connection and Extranet Fees, available at, US Direct-Extranet Connection (nasdaqtrader.com); and Securities Exchange Act Release Nos. 74077 (January 16, 2022), 80 FR 3683 (January 23, 2022) (SR-NASDAQ-2015-002); and 82037 (November 8, 2022), 82 FR 52953 (November 15, 2022) (SR-NASDAQ-2017-114).

³⁴ For example, a third-party reseller may purchase one 10 Gb physical port from the Exchange and resell that connectivity to three different market participants who may only need 3 Gb each and leverage the same single port.

wish to utilize a single, dedicated 10 Gb port (i.e., use one single 10 Gb port themselves instead of sharing a port with other firms), may still realize cost savings via a third-party reseller as it relate to a physical port because such reseller may be providing a third-party reseller as it relate to a physical port because such reseller may be providing a discount on the physical port to incentivize the purchase of additional services and infrastructure support alongside the physical port offering (e.g., providing space, hosting, power, and other long-haul connectivity options). This is similar to cell phone carriers offering a new iPhone at a discount (or even at no cost) if purchased in connection with a new monthly phone plan. These services may reevaluate reselling or offering Cboe's direct connectivity if they deem the fees to be excessive. Further, as noted above, 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. For example, there are approximately 12 third parties who resell Exchange connectivity across the 7 Affiliated Exchanges, which are all accessible on the same network. These third-party resellers collectively maintain approximately 48 physical ports from the Exchange, but have collectively almost 200 unique customers downstream, connected through these multi-Exchange ports. Therefore, given the availability of third-party providers that also offer connectivity solutions, the Exchange believes participation on the Exchange remains affordable (notwithstanding the proposed fee change) for all market participants, including trading firms that may be able to take advantage of lower costs that result from mutualized connectivity and/or from other services provided alongside the physical port offerings. Because third-party resellers also act as a viable alternative to direct connectivity to the Exchange, the price that the Exchange is able to charge for direct connectivity to its Exchange is constrained. Moreover, if the Exchange were to assess supracompetitive rates,

members and non-members (such as third-party resellers) alike, may decide not to purchase, or to reduce its use of, the Exchange's direct connectivity. Disincentivizing market participants from purchasing Exchange connectivity would only serve to discourage participation on the Exchange which ultimately does not benefit the Exchange. Further, the Exchange believes its offerings are more affordable as compared to similar offerings at competitor exchanges.³⁵

Accordingly, vigorous competition among national securities exchanges provides many alternatives for firms to voluntarily decide whether direct connectivity to the Exchange is appropriate and worthwhile, and as noted above, no broker-dealer is required to become a Member of the Exchange, let alone connect directly to it. In the event that a market participant views the Exchange's proposed fee change as more or less attractive than the competition, that market participant can choose to connect to the Exchange indirectly or may choose not to connect to that exchange and connect instead to one or more of the other 12 non-Cboe affiliated equities markets. Indeed, market participants are free to choose which exchange to use to satisfy their business needs. Moreover, if the Exchange were to assess supracompetitive rates, members and non-members alike, may decide not to purchase, or to reduce its use of, the Exchange's direct connectivity. Disincentivizing market participants from purchasing Exchange connectivity would only serve to discourage participation on the Exchange which ultimately does not benefit the Exchange. For example, if the Exchange charges excessive fees, it may 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

³⁵ See e.g., See e.g., The Nasdaq Stock Market LLC ("Nasdaq"), General 8, Connectivity to the Exchange. Nasdaq and its affiliated exchanges charge a monthly fee of \$15,000 for each 10Gbps Ultra fiber connection to the respective exchange, which is analogous to the Exchange's 10Gbps physical port. See also New York Stock Exchange LLC, NYSE American LLC, NYSE Arca, Inc., NYSE Chicago Inc., NYSE National, Inc. Connectivity Fee Schedule, which provides that 10 Gbps LX LCN Circuits (which are analogous to the Exchange's 10 Gbps physical port) are assessed \$22,000 per month, per port.

dynamic imposes powerful restraints on the ability of any exchange to charge unreasonable fees for connectivity. Notwithstanding the foregoing, the Exchange still believes that the proposed fee increase is reasonable, equitably allocated and not unfairly discriminatory, even for market participants that determine to connect directly to the Exchange for business purposes, as those business reasons should presumably result in revenue capable of covering the proposed fee.

Additionally, in connection with a proposed amendment to the National Market System Plan Governing the Consolidated Audit Trail (“CAT NMS Plan”) the Commission again discussed the existence of competition in the marketplace generally, and particularly for exchanges with unique business models.³⁶ The Commission 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 a competitor did not do so, the Commission believes it would be likely that new entrants would do so if the exchange with that unique business model was otherwise profitable.³⁷

As noted above, exchanges also compete as platforms. In the context of the competition among platforms, different exchanges operate a variety of different business models. In fact, there are a number of ways an exchange can differentiate itself, such as by pricing structure, technology and functionality offerings, and products. As discussed above, market participants can access the exchange without purchasing anything from an exchange, instead using third-party routers and data. For those whose business models necessitate the purchase of some mix of trading, connectivity, and data services, there are a variety of options at different price points, allowing market participants to exercise choice, and forcing exchanges to compete on their

³⁶ See Securities Exchange Act Release No. 86901 (September 9, 2019), 84 FR 48458 (September 13, 2019) (File No. S7-13-19).

³⁷ Id.

offerings and prices. Further, all elements of the platform—trade executions, market data, connectivity, membership, and listings—operate in concert. For example, trade executions increase the value of market data; market data functions as an advertisement for on-exchange trading; listings increase the value of trade executions and market data; and greater liquidity on the exchange enhances the value of ports and connectivity services. As such, demand for one set of platform services depends on the demand for other services and therefore to make its platform attractive to multiple constituencies, an exchange must consider inter-side externalities. In assessing competition for exchange services, exchanges must also consider not only explicit costs, such as fees for trading, market data, and connectivity, but the implicit costs, such as realized spreads, of trading on an exchange. When accounting for explicit and implicit costs, research has found that competition has largely equalized all-in trading costs to users across exchanges.³⁸ For example, data has shown that venues with the highest explicit costs (typically inverted and fee-free venues) have the lowest implicit costs from markouts³⁹ and vice versa.⁴⁰ Implicit costs explain how venues with higher explicit costs manage to compete with seemingly much cheaper venues (and conversely, how exchanges with higher implicit costs use lower fees to compete).⁴¹ Additional research also confirms that market participants route trades in a way that not only accounts for explicit and implicit costs – but also very efficiently values

³⁸ Mackintosh, Phil & Normyle, Michael. “How Exchanges Compete: An Economic Analysis of Platform Competition.” Nasdaq, March 2024, <https://www.nasdaq.com/How-Exchanges-Compete-An-Economic-Analysis-of-Platform-Competition>

³⁹ Per-trade markout is a measure of theoretical profitability from the perspective of a liquidity provider.

⁴⁰ Mackintosh, Phil & Normyle, Michael. “How Exchanges Compete: An Economic Analysis of Platform Competition.” Nasdaq, March 2024, <https://www.nasdaq.com/How-Exchanges-Compete-An-Economic-Analysis-of-Platform-Competition>

⁴¹ See id. For example, research by Nasdaq found that it is over 60% more expensive to trade on the costliest exchange than on the cheapest. As Nasdaq noted, such a sizeable disparity suggests that there is another factor that keeps these exchanges in competition. Specifically, when implicit costs are considered, the difference in cost to trade is minimized.

opportunity costs, like lower odds of getting a fill on inverted venues.⁴² As such, the Exchange believes the proposed fee change is reasonable as exchanges are constrained from charging excessive fees for any exchange product, including physical connectivity.

The Exchange also believes the proposed fee increase is reasonable in light of recent and anticipated connectivity-related upgrades and changes. The Exchange and its affiliated exchanges recently launched a multi-year initiative to improve Cboe Exchange Platform performance and capacity requirements to increase competitiveness, support growth and advance a consistent world class platform. The goal of the project, among other things, is to provide faster and more consistent order handling and matching performance for options, while ensuring quicker processing time and supporting increasing volumes and capacity needs. For example, the Exchange recently performed switch hardware upgrades. Particularly, the Exchange replaced existing customer access switches with newer models, which the Exchange believes resulted in increased determinism. The recent switch upgrades also increased the Exchange's capacity to accommodate more physical ports by nearly 50%. Network bandwidth was also increased nearly two-fold as a result of the upgrades, which among other things, can lead to reduce message queuing. The Exchange also believes these newer models result in less natural variance in the processing of messages. The Exchange notes that it incurred costs associated with purchasing and upgrading to these newer models, of which the Exchange has not otherwise passed through or offset.

As of April 1, 2024, market participants also having the option of connecting to a new data center (i.e., Secaucus NY6 Data Center ("NY6")), in addition to the current data centers at

⁴² Bershova, Nataliya & Jaquet, Paul. (2019). Execution Quality and Fee Structure: Passive Lit Executions. Bernstein Electronic Trading, Execution Research.

NY4 and NY5. The Exchange made NY6 available in response to customer requests in connection with their need for additional space and capacity. In order to make this space available, the Exchange expended significant resources to prepare this space, and will also incur ongoing costs with respect to maintaining this offering, including costs related to power, space, fiber, cabinets, panels, labor and maintenance of racks. The Exchange also incurred a large cost with respect to ensuring NY6 would be latency equalized, as it is for NY4 and NY5.

The Exchange also has made various other improvements since the current physical port rates were adopted in 2018. For example, the Exchange has updated its customer portal to provide more transparency with respect to firms' respective connectivity subscriptions, enabling them to better monitor, evaluate and adjust their connections based on their evolving business needs. The Exchange also performs proactive audits on a weekly basis to ensure that all customer cross connects continue to fall within allowable tolerances for Latency Equalized connections. Accordingly, the Exchange expended, and will continue to expend, resources to innovate and modernize technology so that it may benefit its Members and continue to compete among other equities markets. The ability to continue to innovate with technology and offer new products to market participants allows the Exchange to remain competitive in the equities space which currently has 16 equities markets and potential new entrants. If the Exchange were not able to assess incrementally higher fees for its connectivity, it would effectively impact how the Exchange manages its technology and hamper the Exchange's ability to continue to invest in and fund access services in a manner that allows it to meet existing and anticipated access demands of market participants. Disapproval of fee changes such as the proposal herein, could also have the adverse effect of discouraging an exchange from improving its operations and implementing innovative technology to the benefit of market participants if it believes the Commission would

later prevent that exchange from recouping costs and monetizing its operational enhancements, thus adversely impacting competition as well as the interests of market participants and investors. The Exchange also believes the proposed fee is reasonable as it is still in line with, or even lower than, amounts assessed by other exchanges for similar connections.⁴³ Indeed, the Exchange believes assessing fees that are a lower rate than fees assessed by other exchanges for analogous connectivity (which were similarly adopted via the rule filing process and filed with the Commission) is reasonable. As noted above, the proposed fee is also the same as is concurrently being proposed for its Affiliate Exchanges. Further, Members are able to utilize a single port to connect to all of its Affiliate Exchanges and will only be charged one single fee (i.e., a market participant will only be assessed the proposed \$8,500 even if it uses that physical port to connect to the Exchange and another (or even all 6) of its Affiliate Exchanges. Particularly, the Exchange believes the proposed monthly per port fee is reasonable, equitable and not unfairly discriminatory since as the Exchange has determined to not charge multiple fees for the same port. Indeed, the Exchange notes that several ports are in fact purchased and utilized across one or more of the Exchange's affiliated Exchanges (and charged only once).

The Exchange also believes that the proposed fee change is not unfairly discriminatory because it would be assessed uniformly across all market participants that purchase the physical ports. The Exchange 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

⁴³ See e.g., The Nasdaq Stock Market LLC ("Nasdaq"), General 8, Connectivity to the Exchange. Nasdaq and its affiliated exchanges charge a monthly fee of \$15,000 for each 10Gb Ultra fiber connection to the respective exchange, which is analogous to the Exchange's 10Gb physical port. See also New York Stock Exchange LLC, NYSE American LLC, NYSE Arca, Inc., NYSE Chicago Inc., NYSE National, Inc. Connectivity Fee Schedule, which provides that 10 Gb LX LCN Circuits (which are analogous to the Exchange's 10 Gb physical port) are assessed \$22,000 per month, per port.

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. The Exchange also anticipates that firms that utilize 10 Gb ports will benefit the most from the Exchange's investment in offering NY6 as the Exchange anticipates there will be much higher quantities of 10 Gb physical ports connecting from NY6 as compared to 1 Gb ports. Indeed, the Exchange notes that 10 Gb physical ports account for approximately 90% of physical ports across the NY4, NY5, and NY6 data centers, and to date, 80% of new port connections in NY6 are 10 Gb ports. As such, the Exchange believes the proposed fee change for 10 Gb physical ports is reasonably and appropriately allocated.

The Exchange lastly notes that it is not required by the Exchange Act, nor any other rule or regulation, to undertake a cost-of-service or rate-making approach with respect to fee proposals. Moreover, the Exchange notes that it did not raise any arguments relating to its profitability nor is it required to do so in order to demonstrate that its fees are reasonable and consistent with the Act. The Exchange believes that, even if it were possible as a matter of economic theory, cost-based pricing for the proposed fee would be so complicated that it could not be done practically. In fact, the Exchange has represented to the Commission on numerous occasions that the type of data relating to profit margins and return on assets that the Commission is effectively mandating of all exchanges is not feasible for the Exchange, as its costs are not kept in the disaggregated manner necessary for such an analysis. Notwithstanding this fact, the Exchange has recently undertaken the exercise of reviewing its costs and expenses relating to connectivity to explore further cost-related justifications in an effort to address to the best of its

ability the Commission's request for such information. The Exchange represents that it again was not able to do so in the manner expected by the Commission. Furthermore, in setting fees for its physical connectivity, including this current proposed fee change, the Exchange did not perform the type of cost-analysis that the Commission is demanding (consistent with its inability to do so based on how it aggregates its costs and revenue). The Exchange instead considers, as it did here, various factors in setting fees, including the current competitive landscape, the rates historically paid by market participants for connectivity and the potential 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.⁴⁴

The Exchange reiterates Congress's intent in enacting the 1975 Amendments to the Act was to enable competition - rather than government order - to determine prices. The principal purpose of the amendments was to facilitate the creation of a national market system for the trading of securities. Congress intended that this "national market system evolve through the interplay of *competitive forces* as unnecessary regulatory restrictions are removed."⁴⁵ Other provisions of the Act confirm that intent. For example, the Act provides that an exchange must design its rules "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."⁴⁶

Likewise, the Act grants the Commission authority to amend or repeal "[t]he rules of [an]

⁴⁴ Regarding market participant impact, it is notable that since the proposed fee change was first implemented over 14 months ago, the Exchange received no comments from any individual Member suggesting that it was unduly burdened by the proposed changes described herein, notwithstanding the opportunity to do so on several occasions during multiple comment periods. The only comment letters the Exchange did receive were all submitted by the same industry participant notorious for submitting comments opposing any and all market data and connectivity fee filings and equally notorious for the factual inaccuracies and conclusory statements contained therein.

⁴⁵ See H.R. Rep. No. 94-229, at 92 (1975) (Conf. Rep.) (emphasis added).

⁴⁶ 15 U.S.C. 78f(b)(5).

exchange [that] impose any burden on competition not necessary or appropriate in furtherance of the purposes of this chapter."⁴⁷ In short, the promotion of free and open competition was a core congressional objective in creating the national market system.⁴⁸ Indeed, the Commission has historically interpreted that mandate to promote competitive forces to determine prices whenever compatible with a national market system. Accordingly, the Exchange believes it has met its burden to demonstrate that its proposed fee change is reasonable and consistent with the immediate filing process chosen by Congress, which created a system whereby market forces determine access fees in the vast majority of cases, subject to oversight only in particular cases of abuse or market failure. Indeed, the Exchange believes that classification of costs could likely not be done without on-going debate over formulas for allocation⁴⁹, continual auditing, and considerable expense. The Exchange also believes cost-based analysis could create disincentives to reduce costs through efficient operation or innovation. Moreover, the industry could experience frequent rate increases based on escalating expense levels. Additionally, the manner

⁴⁷ 15 U.S.C. 78f(8).

⁴⁸ See also 15 U.S.C. 78k-1(a)(1)(C)(ii) (purposes of Exchange Act include to promote "fair competition among brokers and dealers, among exchange markets, and between exchange markets and markets other than exchange markets"); Order, 73 Fed. Reg. at 74781 ("The Exchange Act and its legislative history strongly support the Commission's reliance on competition, whenever possible, in meeting its regulatory responsibilities for overseeing the SROs and the national market system.").

⁴⁹ See e.g., letter from Brian Sopinsky, General Counsel, Susquehanna International Group, LLP ("SIG"), to Vanessa Countryman, Secretary, Commission, dated February 7, 2023, letters from Gerald D. O'Connell, SIG, to Vanessa Countryman, Secretary, Commission, dated March 21, 2023, May 24, 2023, July 24, 2023 and September 18, 2023, *and* letters from John C. Pickford, SIG, to Vanessa Countryman, Secretary, Commission, dated January 4, 2024, and March 1, 2024 and letters from Thomas M. Merritt, Deputy General Counsel, Virtu Financial, Inc. ("Virtu"), to Vanessa Countryman, Secretary, Commission, dated November 8, 2023 and January 2, 2024. See also Securities Exchange Act Release No. 93883 (December 30, 2021), 87 FR 523 (January 5, 2022) (SR-IEX-2021-14) (Suspension of and Order Instituting Proceedings To Determine Whether To Approve or Disapprove a Proposed Rule Change To Amend Its Fee Schedule for Market Data Fees) and Securities Exchange Act Release No. 94888 (May 11, 2022), 87 FR 29892 (May 17, 2022) (SR-PEARL-2022-18) (Notice of Filing of a Proposed Rule Change To Amend the MIAX PEARL Options Fee Schedule To Increase Certain Connectivity Fees and To Increase the Monthly Fees for MIAX Express Network Full Service Port; Suspension of and Order Instituting Proceedings To Determine Whether To Approve or Disapprove the Proposed Rule Change).

in which one exchange defends its pricing should not be deemed unreasonable simply because it differs from the choices made by other exchanges (e.g., using a cost-based analysis versus discussion on competitive forces). The Exchange lastly cautions that as disputes arise regarding the appropriate measure and calculation of relevant costs and allocation of common costs, the Commission could find itself engaging in the kind of rigid ratemaking not contemplated by Section 11A of the Exchange Act and which the Commission has historically sought to avoid.

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. The proposed fee change will not impact intramarket competition because it will apply to all similarly situated Members equally (i.e., all market participants that choose to purchase the 10 Gb physical port). Additionally, 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 continue to buy the less expensive 1 Gb physical port (which cost is not changing) or may choose to obtain access via a third-party re-seller. While pricing may be increased for the larger capacity physical ports, such options provide far more capacity and are purchased by those that consume more resources from the network. Accordingly, the proposed 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.

The Exchange's proposed fee is also still lower than some fees for similar connectivity on other exchanges and therefore may stimulate intermarket competition by attracting additional

firms to connect to the Exchange or at least should not deter interested participants from connecting directly to the Exchange. Further, if the changes proposed herein are unattractive to market participants, the Exchange can, and likely will, see a decline in connectivity via 10 Gb physical ports as a result. The Exchange operates in a highly competitive market in which market participants can determine whether or not to connect directly to the Exchange based on the value received compared to the cost of doing so. Indeed, market participants have numerous alternative venues that they may participate on and direct their order flow, including 12 non-Cboe affiliated equities markets, as well as off-exchange venues, where competitive products are available for trading. Moreover, the Commission has repeatedly expressed its preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. Specifically, 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.”⁵⁰ The fact that this market is competitive has also long been recognized by the courts. In *NetCoalition v. Securities and Exchange Commission*, the D.C. Circuit stated as follows: “[n]o one disputes that competition for order flow is ‘fierce.’ ... As the SEC explained, ‘[i]n the U.S. national market system, buyers and sellers of securities, and the broker-dealers that act as their order-routing agents, have a wide range of choices of where to route orders for execution’; [and] ‘no exchange can afford to take its market share percentages for granted’ because ‘no exchange possesses a monopoly, regulatory or otherwise, in the execution of order flow from broker dealers’”⁵¹ Accordingly,

⁵⁰ See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005).

⁵¹ *NetCoalition v. SEC*, 615 F.3d 525, 539 (D.C. Cir. 2010) (quoting Securities Exchange Act Release No. 59039 (December 2, 2008), 73 FR 74770, 74782-83 (December 9, 2008) (SR-NYSEArca-2006-21)).

the Exchange does not believe its proposed 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 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 Act⁵² and paragraph (f) of Rule 19b-4⁵³ 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 (<https://www.sec.gov/rules/sro.shtml>); or
- Send an email to rule-comments@sec.gov. Please include file number SR-CboeBYX-2024-032 on the subject line.

⁵² 15 U.S.C. 78s(b)(3)(A).

⁵³ 17 CFR 240.19b-4(f).

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-CboeBYX-2024-032. 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 (<https://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 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright

protection. All submissions should refer to file number SR-CboeBYX-2024-032 and should be submitted on or before [INSERT DATE 21 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.⁵⁴

Vanessa A. Countryman,
Secretary.

⁵⁴ 17 CFR 200.30-3(a)(12).