



FAQs: Barclays ATS – LX

As of November 2019

Contents

Electronic Trading Practices	1
1. Access to confidential trading information.....	1
2. Protection of confidential trading information.....	1
3. Advertisement of executed volume	2
4. Execution and venue transparency	2
5. Order handling customizations.....	3
6. Platform enhancements	3
The Barclays ATS – LX®	4
7. Right to restrict access	4
8. Connectivity and order entry.....	4
9. Access fees and commissions.....	4
10. Subscribers	4
11. Barclays’ principal orders in LX	4
12. Segmentation of order flow	5
13. Counterparty restriction functionality	5
14. Execution priority	8
15. Order types	8
16. Conditional order negotiations	8
17. Minimum quantity	9
18. Odd and mixed lots	9
19. Locked markets	10
20. Price improvement.....	10
21. Sub-penny limit price orders in LX.....	10
22. Self-trades.....	10
23. Market Access Rule (Rule 15c3-5).....	11
24. Reg SHO price test.....	11
25. Limit up/limit down bands	11
26. Trading halts.....	11
27. Best execution of customer orders.....	11
28. LX is a non-displayed ATS.....	11
29. Trade reporting.....	12
30. Market data for LX.....	12
31. Data accuracy checks	12
32. Location of LX and connectivity	12

Electronic Trading Practices

This document is limited to products and services offered by Barclays that access the US Markets through electronic trading products and does not refer to any products that route to other markets, such as markets in Europe or Asia. Please note, when reviewing this document all references to “LX” or “Barclays LX” are referring to the firm’s alternative trading system (ATS) that is registered with the Securities and Exchange Commission and trades NMS securities in the United States. References to ‘Electronic Order Handling FAQ’ numbers are from the ‘FAQs: Equities Electronic Order Handling’ document available at barclays.com/equities. This document should be read in conjunction with the LX FIX Specification.

1. Access to confidential trading information

Barclays does not have any personnel solely responsible for LX. Barclays considers Subscribers' identities, information relating to live orders, trading interests and executions in LX and post-execution information that Barclays reasonably believes contains evidence of orders and trading interests currently in LX (as well as data or analytics related to such post-execution information) to be confidential subscriber information. The foregoing notwithstanding, Barclays does not consider post-execution information typically of the type made public under reporting or regulation (e.g., information that is reported to the consolidated tape pursuant to FINRA trade reporting requirements), or information of an aggregated nature (e.g., aggregated and anonymous execution statistics of the type reported on Barclays website (as described in Part III, Item 26 of the Barclays LX ATS-N filing) and the information disclosed as described in Part II, Item 7(b) of the Barclays LX ATS-N filing) to be confidential subscriber information. Barclays also does not consider any post-execution information when used by its settlements, operations and middle office personnel in the ordinary course of their job functions to be confidential subscriber information. Barclays administers the ability to monitor client electronic trading flow through permission-based systems.

For a summary of the shared personnel that service both LX and BCI or a BCI Affiliate, including the Electronic Trading Department, Service Desk, Statistical Modelling and Development ("SMAD"), Product Development, Electronic Sales and Origination, Electronic Trading Senior Management, Electronic Markets Risk & Control, Equities QPS Personnel, Equities Sales and Trading, Equities Sales, Equities Trading, Barclays Senior Management, technology-related groups, Best Execution Working Group, ATS Governance Forum, Control Functions and other groups, please see Part II, Item 6 of LX form ATS-N filing posted on the SEC's web page available at <https://www.sec.gov/divisions/marketreg/form-ats-n-filings.htm>.

2. Protection of confidential trading information

The matching engine and associated gateways for LX run on standalone hardware (i.e., server) that is not shared with any other Barclays system. The hardware for LX is housed in the same data center as other Barclays systems. Barclays maintains physical restrictions, policies and procedures designed to safeguard the confidential trading information of Subscribers (see FAQ 1).

For additional details about the safeguards and procedures to protect the confidential trading information of LX Subscribers, please see Part II, Item 7 of LX form ATS-N filing posted on the SEC's web page available at <https://www.sec.gov/divisions/marketreg/form-ats-n-filings.htm>.

3. Advertisement of executed volume

We advertise our electronic volumes in combination with our high-touch volumes in near real time via Bloomberg IOIA and RANKA screens. Only symbol and aggregated volume are displayed for Bloomberg users utilizing this function. Advertising is generally published in batch intervals for periodic advertising where all trades during that time period are advertised together, however, individual trades can be advertised on a more frequent basis.

Please note, these advertisements do not include the executed volume of clients who have opted out. To opt out of your executions with Barclays being included in aggregated volume reporting or analytics, please contact your Barclays sales representative.

ATS volume data is published by FINRA on a delayed basis at finra.org/ats.

4. Execution and venue transparency

To provide order transparency, Barclays offers its clients the ability to receive a variety of information and reports regarding their own orders. This information varies from time to time and may include, but is not limited to, execution venues, percentage of order flow executed in various venues, crossing rates in LX, percentage of order flow executed against various types of counterparties in LX, and a client's algorithmic and Router settings.

In addition, Barclays publishes on its website (barclays.com/equities) monthly statistics related to LX which includes the following:

- Various aggregated and anonymized order and execution metrics
- Aggregated LX reported shares for the previous 12 months
- Number of subscribers that have changed Liquidity Profiling category (see FAQs 12 and 13), and the percentage of LX take flow they represent in notional value
- Number of and framework for any Liquidity Profiling Overrides from the previous month's review (see FAQ 12) and the percentage of LX take flow they represent in notional value
- Percentage of execution by Subscriber Type (see FAQ 10).

Barclays also may include aggregated and anonymized analysis in its marketing materials or its client presentations related to various order and execution metrics about orders and executions in LX.

In addition, Barclays may make available to clients the following tools:

- Near real-time trade monitoring through our Portfolio WebBench® analytics toolkit (not available to LX Direct Subscribers; for additional information, please contact your Barclays sales representative)
- Detailed reporting of both routing and LX results, including venue and LX execution analysis (through our Portfolio WebBench® analytics toolkit)
- Various FIX tags, e.g., trade destination, executing broker, add/take details
- Access to SPECS™, an online client interface where clients may view, verify, and request changes to their order handling settings with Barclays.

Please contact your Barclays sales representative for any additional information.

5. Order handling customizations

Barclays provides its clients with the ability to customize certain handling of their electronic orders. For example, as discussed in more detail in other FAQs, Barclays provides its clients with the ability to opt out of the following:

- Participating in conditional order negotiations (see FAQ 16 and Electronic Order Handling FAQ 26)
- Interacting in LX with certain subscribers, subscriber types, or order flow (see FAQ 13)
- Crossing their orders in a locked market on a trade-by-trade or default basis in LX (see FAQ 19)
- Including their LX order information in the aggregated information provided to Barclays' smart order router ("Router") (see FAQ 28)

Clients also may customize other default settings for order flow handled by Barclays algorithms or the Router.

Clients may view, verify, and request changes to their order handling settings through the online client interface SPECS™. Note: If after being granted access to SPECS and receiving your settings, you do not notify us that you wish to make changes to your settings, then by continuing to transact with Barclays, you are deemed to have provided consent that those settings are correct.

For additional information regarding your ability to customize the handling of your orders, please contact your Barclays sales representative.

6. Platform enhancements

At any time, Barclays may implement enhancements to its equities electronic trading platform, which includes Barclays LX and its core infrastructure components. The enhancements may be rolled out across the platform as a whole or in multiple phases. For some enhancements a group made up of internal traders, and in some circumstances clients who have opted in, may be given access to functionality for verification purposes that is not available to all clients and which is not fully described in this document. Internal traders who are given access to this functionality may be trading on behalf of clients. Please contact your Barclays electronic sales representative for details on enhancements or new features currently being rolled out.

The Barclays ATS – LX[®]

7. Right to restrict access

Barclays reserves the right to restrict access to LX or associated features to any subscriber at its sole discretion.

8. Connectivity and order entry

All subscribers can access Barclays ATS (a) directly via an electronic order entry connection, (b) through Barclays' Algos, or (c) through the Router. LX supports direct order entry only via FIX. There is no proprietary protocol available.

9. Access fees and commissions

Per-share commissions and fees for electronic trading are negotiated.

Barclays does not charge LX subscribers access fees. Subscribers may be charged a commission when executing in LX. Commissions for trading in LX are negotiated.

Barclays does not offer rebates for trading in LX.

10. Subscribers

The following types of clients (each a "Subscriber Type")¹, have access to our internal dark pool, LX:

- Barclays Institutional Clients & Client Algo/Router Users: Institutional and broker-dealer clients that route orders to LX via Barclays' Algorithmic Trading products ("Algos") and/or Router and Institutional clients (i.e., non-broker-dealer clients) that route orders directly to LX.
- Broker-Dealers: Third-party broker-dealers that route orders directly to LX on behalf of their clients, or on behalf of their clients and themselves.
- ELPs: Third-party broker-dealers that route orders directly to LX solely on a principal basis and/or ATS Subscribers who self-identify as ELPs.
- Barclays Trading Desks: Barclays client-facing trading desks when executing in a principal capacity in LX and affiliate trading desks executing in LX.
- Barclays Principal Desk: Barclays registered options market making desk.

11. Barclays' principal orders in LX

Barclays' internal trading desks have the ability to place principal orders for execution in LX. Barclays' desks do not receive any special treatment or information regarding orders or executions within LX. Clients can also choose to opt out of interacting with all Barclays' orders with an order capacity marked as principal. A Subscriber may apply this opt-out on an order-by-order basis or as a change to its default trading profile applicable to all of its orders.

¹ Barclays uses its best efforts in placing subscribers into a Subscriber Type based on publicly-available information and information obtained by Barclays from the subscriber. Please note, subscribers in the Broker-Dealer group may have underlying clients that are institutional clients, ELP clients, or other Broker-Dealer clients. Barclays does not categorize based on the Broker-Dealer's underlying clients, unless Barclays has a direct relationship with a Broker-Dealer's underlying client, as that client will be on-boarded with Barclays directly and will be categorized accordingly.

Note: Some subscribers may execute under multiple subscriber identifiers (or acronyms) for different trading strategies, different groups within a firm, or different means of accessing LX. Each subscriber acronym is evaluated independently and assigned the applicable Subscriber Type. As a result, a subscriber may have multiple Subscriber Types associated with it. For example, a broker-dealer that routes to LX, both with a direct connection as well as via Barclays Algos, would be classified as a Broker-Dealer for the order flow that is routed to LX directly and as a Barclays Institutional Clients & Algo/Router User for their order flow through Barclays Algos.

Please note, however, that if a subscriber elects to restrict interaction with Barclays orders with an order capacity marked as principal, they will also be restricted from interacting with all Barclays affiliates' order flow in the ATS.

12. Segmentation of order flow

Barclays employs a framework called Liquidity Profiling for categorizing liquidity removing activity within our ATS.

Liquidity Profiling categorization applies only to subscribers that route directly to LX when removing liquidity, and is based on one-second alpha, which is the midpoint-to-midpoint market movement over a one-second horizon, normalized by the daily average spread.

Based on this metric, subscribers are placed into one of three alpha categories: Low, Medium, and High (Low being the lowest alpha category <0.141 and High being the highest alpha category >0.201). Barclays reserves the right to review and adjust the factors considered when categorizing subscribers based on their order flow that removes liquidity. Orders routed to LX by the Router or the Algos are placed into the Low alpha category by default.²

On a monthly basis, Barclays reviews the Liquidity Profiling categorizations of subscribers that route directly to LX, based on 20 trading days.³ Barclays retains discretion to override a subscriber's Liquidity Profiling categorization by maintaining that subscriber in its previous, higher alpha category (an "Override"). Barclays will consider previous trading behavior when determining whether to apply an Override and may wait for additional data before implementing a change to a lower alpha category, if such a change to a lower alpha category is indicated by Liquidity Profiling.⁴ Note: Barclays' discretion is not used to move a subscriber to a lower alpha category than that indicated by Liquidity Profiling.

13. Counterparty restriction functionality

- **Blocking by Liquidity Profiling category**

A subscriber may customize its posted order interactions in LX by designating Liquidity Profiling categories it wishes to interact with (e.g., block all counterparties from the High category).⁵ Subscribers can apply blocking by Liquidity Profiling category to their posted orders sent directly to LX or routed through the Algos or Router.

- **B. Blocking by Subscriber Type**

As an alternative to the Liquidity Profiling framework Barclays Institutional Clients & Client Algo/Router Users may request to suppress interaction with certain Subscriber Types (i.e., Barclays Institutional Clients & Client Algo/Router Users, Broker-Dealers, ELPs, Barclays Trading Desks, Barclays Principal Desk; see FAQ 10). Unlike blocking by Liquidity Profiling category, which can only be applied by a subscriber when providing liquidity, blocking by Subscriber Type can be applied by a subscriber when providing or taking liquidity, or both.

Subscriber Type blocking can be utilized for orders sent directly to LX or routed through the Algos or Router. This type of counterparty restriction functionality is not currently offered to subscribers that are ELPs, Broker-Dealers, Barclays Principal Desk, or Barclays Trading Desks.

² This group of subscribers includes, but is not limited to, clients that utilize the Router to send directed orders to the ATS, and Barclays trading desks that utilize Barclays Algos or Router.

³ Please note, Barclays may conduct two reviews in a calendar month, given that it reviews 20 days of trading data; those details will be provided in the monthly report published on Barclays' website.

⁴ Barclays reserves the right to Override a subscriber to a higher alpha category intra-month, if a review of that subscriber's trading activity warrants such an Override in Barclays' discretion.

⁵ Some subscribers may execute under multiple subscriber identifiers (or acronyms) for different trading strategies, different groups within a firm or different means of accessing LX. For Liquidity Profiling purposes each subscriber acronym is evaluated independently and placed into the applicable category. As a result, a subscriber may have multiple Liquidity Profiling categories associated with it.

Note: The ability to suppress interaction on an order-by-order basis with particular Subscriber Types and to simultaneously avoid having liquidity taken by particular Liquidity Profiling categories is not a supported functionality.

C. Blocking by specific subscriber

Separately, Barclays Institutional Clients & Client Algo/Router Users may request that Barclays suppress the interaction of their orders in LX with specific subscribers. While Barclays will not confirm to a subscriber whether an entity that it wishes to block is an LX subscriber, Barclays will use commercially reasonable efforts to suppress interaction with the entity if it is a subscriber. Customized blocking can be utilized for orders sent directly to LX or routed through the Algos or Router. This type of counterparty restriction functionality is not currently offered to subscribers that are ELPs, Broker-Dealers, Barclays Trading Desks or Barclays Principal Desk.

Barclays offers all subscribers the ability to request that Barclays evaluate orders and/or executions to determine if strategies of other subscribers may be adversely affecting their interactions within LX. If Barclays determines that a certain subscriber or group of subscribers may be adversely impacting the subscriber that inquired, Barclays will allow the subscriber the ability to block further interactions with those subscribers⁶, without disclosing their identities.

D. Blocking Barclays principal orders

In addition to the above described counterparty restriction functionalities, subscribers also have the ability to restrict interaction with all Barclays orders with an order capacity marked as principal. Please note, however, that if a subscriber elects to restrict interaction with Barclays orders with an order capacity marked as principal, they will also be restricted from interacting with all Barclays affiliates' order flow in the ATS.

E. Blocking by minimum duration ("LX MinTime")

LX MinTime is a counterparty restriction functionality that allows Barclays Institutional Clients & Algo/Router Users to limit interactions with LX direct subscribers to only those orders of LX direct subscribers⁷ that have rested on the LX order book for a minimum of one second.⁸

Who can use LX MinTime?

- Barclays Institutional Clients & Client Algo/Router Users⁹

What orders can a subscriber enable LX MinTime for?

- Firm orders
- Conditional eligible firm orders¹⁰

What orders can a subscriber not enable LX MinTime for?

- Conditional orders and the related firm-up orders

⁶ Note: a subscriber can elect to block that subscriber entirely or to block specific order types of that subscriber.

⁷ LX direct subscribers are subscribers who route their orders to LX via an electronic FIX connection and not through Barclays Algos/Router. (see FAQ 8).

⁸ Note: this does not restrict the client's interactions with any other order flow in the ATS that is not entered from a direct order entry connection. Also, the LX MinTime length is configured by Barclays' personnel and may be periodically updated.

⁹ Barclays Institutional Clients that route directly to LX (see FAQ 10) may elect to utilize LX MinTime on an order-by-order or default basis. A client that utilizes Barclays Algo/Router may utilize LX MinTime across all orders or on an individually configured basis depending on the client's execution objectives. This type of counterparty restriction is not currently offered to subscribers that are ELPs, Broker-Dealers, Barclays Principal Desk, or Barclays Trading Desks.

¹⁰ LX MinTime can be used when sending conditional eligible firm orders, but it will only affect a subscriber's interactions with firm orders, not conditional orders or the related firm-up orders.

What order flow does LX MinTime restrict interaction with?

- LX MinTime restricts interaction with orders from LX direct subscribers unless the LX direct subscriber's order has rested for at least one second

What contra-side order flow does LX MinTime not restrict interaction with?

- Algo/Router orders
- Conditional orders and the related firm-up orders

How will utilizing LX MinTime apply in relation to other counterparty blocking instructions that the subscriber may be using?

- LX MinTime will override instructions to block by Liquidity Profiling category¹¹ unless the contra-side order is a Conditional order or the related firm-up orders
- LX MinTime will override instructions to block by Subscriber Type¹² unless the contra-side order is a Conditional order or the related firm-up orders
- LX MinTime can be used in conjunction with requests to block specific subscribers¹³
- LX MinTime can be used in conjunction with instructions to block Barclays Principal Orders¹⁴

How will LX MinTime apply with respect to conditional order interactions?

- LX MinTime will not affect a subscriber's interactions with contra-side conditional and firm-up orders¹⁵

F. Potential effect of counterparty restriction functionality

Counterparty restriction functionality may result in reduced execution rates, either because a subscriber may have chosen to suppress certain subscriber interactions or because a subscriber is within a segment of flow that has been suppressed by other subscribers.

The purpose of the counterparty restriction functionality is to allow subscribers more control over the execution of their orders.¹⁶ For example, a Barclays' subscriber may disable interaction with Barclays principal order flow, subscribers that are categorized as High under Liquidity Profiling, with specific Subscriber Types, or with applicable contra-side orders that don't meet the LX MinTime requirement. Each subscriber determines whether it will use any blocking functionality.

To activate counterparty restriction functionality for blocking by (A) Liquidity Profiling category, (B) Subscriber Type, or (C) specific subscriber, or to enable (E) LX MinTime, please contact your Barclays sales representative.

Barclays reserves the right to deny a subscriber access to any counterparty restriction functionality.

¹¹ For example, if a subscriber that normally blocks the High category enables LX MinTime, they may interact with orders from subscribers in the High category as long as those orders have met the LX MinTime requirement.

¹² For example, if a Barclays Institutional Client or Algo/Router User has blocked interactions with ELPs and has enabled LX MinTime, they may interact with orders from ELPs as long as those orders have met the LX MinTime requirement.

¹³ For example, if a subscriber has requested not to trade against a specific counterparty and has enabled LX MinTime for the order, trading with that counterparty will still be blocked.

¹⁴ For example, if a Barclays Institutional Client or Algo/Router User has blocked interactions with Barclays Principal Orders and has enabled LX MinTime for the order, trading with Barclays Principal Orders will still be blocked.

¹⁵ For example, for interactions with contra-side Conditional Orders, if a Barclays Institutional Client or Algo/Router User has Subscriber Type Blocking or Liquidity Profiling enabled as a default for all of their orders, and they subsequently enable LX MinTime, LX MinTime will not apply and only the default blocking will apply.

¹⁶ Each subscriber has its own execution objectives. Such objectives might include, for example, maximizing fill rates, limiting adverse selection, and interacting only with specific Subscriber Types.

14. Execution priority

LX employs a price-tier-time priority. For providing liquidity, all trading subscribers are assigned to one of two tiers:

- Tier 1 consists of Barclays Institutional Clients & Client Algo/Router Users
- Tier 2 consists of all other subscribers including Broker-Dealers, ELPs, Barclays Trading Desks, and Barclays Principal Desk

Tier 1 receives execution priority over Tier 2.

Note: Client tiering does not apply when participants are taking liquidity from LX; only when participants are providing liquidity to LX. Also note, Subscriber Types (i.e., Barclays Institutional Clients & Client Algo/Router Users, Broker-Dealers, ELPs, Barclays Trading Desks, and Barclays Principal Desk) are defined in FAQ 10.

Example

An ELP subscriber places a day order at 10:00am to buy ABC stock at mid and it rests on the book. At 10:01am a Barclays Institutional Clients & Algo/Router User subscriber places a day order to buy ABC stock at mid and it also rests on the book. At 10:02am a Subscriber places an order to take liquidity in ABC stock. That order will transact against the Barclays Institutional Clients & Algo/Router User subscriber prior to transacting against the ELP subscriber.

15. Order types

LX accepts limit orders, pegged orders (including pegged orders with limit prices), and conditional orders. Market orders are not accepted. Only Day and IOC time in force are accepted. Additionally, ATS subscribers have the option to set execution parameters based on their trading objectives on an order-by-order or default basis. These optional execution parameters include: NoLockCross, MinQty, Add Liquidity Only - ALO, and CancelQty. The use of particular order types or parameters may impact the execution priority and the fill rate (e.g., an order with a minimum execution size may not be executed against contra-side interest that does not meet the minimum size requirement). For more information on LX order types, please refer to Barclays LX Form ATS and Barclays LX FIX Specification.

16. Conditional order negotiations

- **Conditional orders**

LX provides a process for negotiating trades based on conditional parameters, called a “conditional order negotiation” (or “conditional order”). Conditional order is a feature that maximizes the liquidity available to a client’s order by over-exposing the order quantity without the risk of over-filling (barring any unforeseen technology errors).

A client may submit a conditional order to LX via the electronic order entry connection, the Router, or a Barclays’ algorithm which will generate a conditional order message. This message describes the client’s potential interest in a trade with information on price, size, side, and symbol. Because the message is marked “conditional,” it is not executable. Note: As further described in FAQ 28, information about posted firm orders is shared with the Router. Information about posted Conditional Orders, however, is not shared with the Router.

If a conditional order in LX finds a potential contra-side match¹⁷, LX will send back a “conditional invitation” indicating that a potential match has been found. The conditional invitation confirms the price, size, side, and

¹⁷ Conditional orders may interact with either conditional or conditional-eligible firm orders; the ability to limit the interaction of a subscriber’s conditional orders to only other conditional orders is not supported.

symbol of the potentially matching interest. At this time a match timer begins. The duration of the match timer is currently set at 100 ms. Depending on how the conditional order was entered into LX, the client, the Router, or Barclays' algorithms may then send a "firm-up" order in response to the conditional invitation. This firm-up order is treated as any other order sent to LX, and is executed according to the price/tier/time priority. Firm-up orders received by the matching engine after the match timer expires will not receive an execution, and will be canceled back, provided no other orders are resting on the book that can execute against the firm-up order.

Currently, Barclays only offers this functionality to the following Subscriber Types: Barclays Institutional Clients & Client Algo/Router Users, Broker-Dealers, and Barclays Trading Desks. This functionality is not made available to ELPs and Barclays Principal Desk. Barclays reserves the right to limit or prohibit the use of this order type by a subscriber at its discretion.

By default, Barclays' algorithms will utilize conditional orders to provide users with the most access to available liquidity. If you are interested in opting out of conditional order negotiations, please contact your Barclays sales representative.

- **Conditional-eligible firm orders**

By default, all firm orders sent to LX by Barclays' algorithms will be designated eligible to participate in conditional order negotiations ("conditional eligible firm order") so that client orders may interact with the maximum amount of potential liquidity. If a conditional eligible firm order has been identified by LX as a potential match to a conditional order, LX will send to the client submitting the conditional order an invitation to provide a firm-up order. The client sending the conditional-eligible firm order will not receive any indication that there is a potential for a match with a conditional order. Firm orders sent to LX that are not designated conditional-eligible will not match against a conditional order.

If you have any questions regarding how conditional orders operate, or if you do not want your algorithmic orders to be conditionally eligible, you can opt out of this functionality by contacting your Barclays sales representative. Please note, if you elect to opt out of this functionality you will also be opting out of the ability to use conditional orders as described above.

Firm orders from clients accessing LX directly will not be eligible to interact with conditional orders, but will be able to interact with conditional-eligible firm orders.

17. Minimum quantity

LX supports minimum quantity instructions. LX does not "bunch" fills to satisfy the minimum quantity requirement of a client. Each fill from LX will be of a quantity equal to or greater than the minimum quantity specified by the client on the order. If the remaining open shares (leaves quantity) falls below the minimum quantity, LX will, by default, treat the remaining quantity as the minimum quantity. As an alternative, a subscriber may send an instruction to cancel the order if the leaves quantity falls below a designated minimum quantity.

18. Odd and mixed lots

LX does not support orders for odd-lot quantities and will not execute an odd-lot quantity; odd-lot orders will be rejected.

LX does support mixed-lot orders. When two mixed-lot orders are of the exact same quantity, the full order size will cross (e.g., 140 shares bought against 140 shares sold).

If a round-lot order and a mixed-lot order cross, any odd-lot leaves will be automatically canceled back to the client (e.g., if 140 shares to buy crosses with 100 shares to sell, 100 shares will trade and 40 shares will be immediately canceled back to the buyer).

If two mixed-lot orders of different quantities cross, the odd-lot leaves on each side will be automatically canceled back to each client (e.g., if 140 shares to buy, crosses with 120 shares to sell, 100 shares will trade and 40 shares will be immediately canceled back to the buyer; 20 shares to the seller.)

19. Locked markets

During a locked market, midpoint peg orders will not execute in LX but other peg and limit orders can. Clients have the ability to opt out of any locked market crossing for all their trades or on a trade-by-trade basis. Additionally, subscribers have the ability to opt in to receiving midpoint executions in a locked market. Orders will reside on the order book until the crossed market has ended.

20. Price improvement

When there is spread overlap, price improvement opportunities are divided between the provider and taker of liquidity 50/50.

Example

The market for XYZ is 152.05/152.06. Subscriber A provides liquidity with an order to buy at the offer price (buy at 152.06). An order comes in from Subscriber B to sell at the bid (sell at 152.05).

- Subscriber A is posted to buy .01 above the bid, creating a spread overlap of .01
- 50% of the spread will go to Subscriber A, who is providing liquidity: $50\% \times .01 = .005$
- 50% of the spread will go to Subscriber B, who is taking liquidity: $50\% \times .01 = .005$
- The trade will execute at 152.055
- Therefore, Subscriber A buys at 152.055 instead of 152.06, resulting in 50 mils of price improvement. Subscriber B sells at 152.055 instead of 152.05, resulting in 50 mils of price improvement.
- Note: Subscribers may get sub-penny executions in LX due to price improvement logic.

21. Sub-penny limit price orders in LX

Limit prices in LX must follow minimum price variance rules as dictated by Regulation NMS. Any limit price over \$1 can have at maximum 2 decimals, and any limit price under \$1 can have at maximum 4 decimals. Otherwise, non-conforming orders will be rejected.

22. Self-trades

By default, LX does not allow the interaction of orders originating from the same subscriber identifier (i.e., client acronym). However, subscribers with a single acronym that are registered broker-dealers may request that their orders be allowed to interact in LX, if they can attest that a change in beneficial ownership will occur.

For subscribers with multiple acronyms, orders from two different acronyms of the same subscriber can interact in LX. Subscribers must notify Barclays if they would like to prevent the interaction of their orders from different acronyms and may specify directions by pairs of acronyms.

23. Market Access Rule (Rule 15c3-5)

Barclays is subject to, and maintains controls pursuant to, SEC Rule 15c3-5 with respect to the orders sent to LX by non-broker-dealer subscribers. However, Barclays has no obligations under SEC Rule 15c3-5 when receiving orders from Broker-Dealers and ELPs.

LX has various controls in place to prevent the entry of erroneous orders (e.g., maximum order quantity and notional value limits). For more information on Barclays controls, please reach out to your Barclays sales representative.

24. Reg SHO price test

LX will not execute and trade when the following criteria are met: (1) a Reg SHO price test indicator is in effect, (2) the seller has marked his order short, and (3) the cross price is calculated to be less than or equal to the current national best bid. Orders will remain on the order book as is, and will not be re-priced to allow for crossing. LX will not automatically reject or cancel orders for Reg SHO price test; however, all resting orders will be canceled at the market close.

25. Limit up/limit down bands

LX will accept orders outside of the bands; however, it will not execute if the calculated cross price is outside of the Limit Up/Limit Down (“LULD”) bands. All other crossing constraints (e.g., NBBO, Reg SHO price test) still apply. LX will not re-price orders to allow for crossing within the bands. LX will not automatically reject or cancel orders if the crossing price is outside of crossing constraints; however all resting orders are canceled at the market close.

During a trading pause or regulatory halt in an NMS stock subject to the LULD Plan, LX will not reject or cancel orders in the security. Following the trading pause or regulatory halt, LX will resume executing orders once trading has commenced on the primary listing exchange and LX has received the price bands from the SIP (provided that if the primary listing exchange is unable to reopen due to technology or system issues, LX will resume trading upon receipt of the price bands from the SIP).

26. Trading halts

If a symbol is halted, orders on the book will remain on the book as they were prior to the halt. LX will not cancel orders in the event of a halt and will not re-order the book following a halt. As per usual, all posted orders in the book will be canceled at the market close.

27. Best execution of customer orders

Barclays has a duty to seek to obtain the most favorable terms reasonably available for customer orders. To help meet this obligation, Barclays periodically reviews the quality of its customers’ executions, including orders routed to LX. In addition, LX is designed to execute orders at or within the NBBO in accordance with Rule 611 under Regulation NMS of the Securities Exchange Act of 1934.

28. LX is a non-displayed ATS

LX is a non-displayed ATS. Subscribers do not receive information from LX other than details pertaining to their own orders, and subscribers that elect to engage in conditional order negotiations may receive information related to conditionally-matched orders (see FAQ 16).

For the limited purpose of helping Barclays meet its best execution obligations to customers, LX provides information about posted orders (other than about Conditional Orders, as described in Part III, Item 9 of Form ATS-N) to the Router on a real-time basis. The Router uses the posted order information from LX solely to decide whether to route an order to the ATS. The Router does not share this information with any other Barclays trading

system, desk, or any third party. Clients can opt out of having their LX order information included in the aggregated information provided to the Router (see Electronic Order Handling FAQ 15).

The Router does not generate indications of interest based on information from LX. The Router does receive indications of interest from third parties (see Electronic Order Handling FAQs 13 and 17).

LX does not route orders to any other venues.

29. Trade reporting

All executions in Barclays LX are reported to the Nasdaq TRF in real time. Note: in the event of an issue that would prevent Barclays from reporting LX trades to the TRF, LX will halt trading in at least the affected securities until the issue has been resolved.

30. Market data for LX

Barclays employs a third-party vendor, Exegy, for the purposes of determining the current best bid and best offer (“NBBO”) in the market for pricing orders and to calculate prices for pegged orders. The Exegy appliance calculates the current NBBO based on direct data feeds received by Barclays from all protected venues under Regulation NMS.

In the event of a disruption in a direct data feed from a protected venue (e.g., if the venue is experiencing technology issues), LX has a backup mechanism to use the SIP feed received by Barclays from that venue instead. In such instances, Barclays provides the SIP feed to the Exegy appliance which determines the current NBBO.

31. Data accuracy checks

In order to ensure that LX is using a timely and accurate NBBO, Barclays employs numerous checks to ensure market data accuracy. These include, but are not limited to, the use of proprietary programs and third-party tools which produce both intra-day and T+1 measures of LX’s NBBO accuracy versus an outside data source.

LX is monitored monthly for its compliance with the volume thresholds set forth in Regulation SCI and the Fair Access section of Regulation ATS. If Barclays determines that trading on LX is approaching any such volume threshold in a security, Barclays may determine, at its discretion, to disable trading in that security.

32. Location of LX and connectivity

As of October 2016, LX is hosted in the Equinix NY5 Data Center in Secaucus, NJ. Cross-connections to LX in Secaucus are available to all clients by request.

DISCLAIMER

This communication has been prepared by Barclays. "Barclays" means any entity within the Barclays Group of companies, where "Barclays Group" means Barclays Bank PLC, Barclays PLC and any of their subsidiaries, affiliates, ultimate holding company, and any subsidiaries or affiliates of such holding company. BARCLAYS IS A FULL SERVICE INVESTMENT BANK. In the normal course of offering investment banking products and services to clients, Barclays may act in several capacities (including issuer, market maker and/or liquidity provider, underwriter, distributor, index sponsor, swap counterparty, and calculation agent) simultaneously with respect to a product, giving rise to potential conflicts of interest which may impact the performance of a product. This document is from a Barclays Trading and/or Distribution desk and is not a product of the Barclays Research department. Any views expressed may differ from those of Barclays Research. Barclays may at any time acquire, hold, or dispose of long or short positions (including hedging and trading positions) and trade or otherwise effect transactions for their own account or the account of their customers in the products referred to herein, which may impact the performance of a product. THIS COMMUNICATION IS PROVIDED FOR INFORMATION PURPOSES ONLY AND IT IS SUBJECT TO CHANGE. IT IS INDICATIVE ONLY AND IS NOT BINDING. Barclays is not offering to sell or seeking offers to buy any product or enter into any transaction. Any offer or entry into any transaction requires Barclays' subsequent formal agreement which will be subject to internal approvals and execution of binding transaction documents. Neither Barclays nor any of its directors, officers, employees, representatives or agents, accepts any liability whatsoever for any direct, indirect or consequential losses (in contract, tort or otherwise) arising from the use of this communication or its contents or reliance on the information contained herein, except to the extent this would be prohibited by law or regulation. Barclays is not acting as a fiduciary. Barclays does not provide, and has not provided, any investment advice or personal recommendation to you in relation to the transaction and/or any related securities described herein and is not responsible for providing or arranging for the provision of any general financial, strategic, or specialist advice, including legal, regulatory, accounting, model auditing, or taxation advice or services, or any other services in relation to the transaction and/or any related securities described herein. Accordingly, Barclays is under no obligation to, and shall not, determine the suitability for you of the transaction described herein. You must determine, on your own behalf or through independent professional advice, the merits, terms, conditions, and risks of the transaction described herein. Barclays is not responsible for information stated to be obtained or derived from third-party sources or statistical services. Any past or simulated past performance, including back-testing, modeling, or scenario analysis contained herein is no indication as to future performance. No representation is made as to the accuracy of the assumptions made within, or completeness of, any modeling, scenario analysis, or back-testing. All opinions and estimates are given as of the date hereof and are subject to change. The value of any investment may also fluctuate as a result of market changes. Barclays is not obliged to inform the recipients of this communication of any change to such opinions or estimates. This document is being directed at persons who are professionals and is not intended for retail customer use.

For important regional disclosures you must read, visit the link relevant to your region. Please contact your Barclays representative if you are unable to access.

EMEA <https://www.home.barclays/disclosures/important-emea-disclosures.html>,

APAC <https://www.home.barclays/disclosures/important-apac-disclosures.html>,

US <https://www.home.barclays/disclosures/important-us-disclosures.html>.

This communication is confidential and is for the benefit and internal use of the recipient for the purpose of considering the securities/transaction described herein, and no part of it may be reproduced, distributed, or transmitted without the prior written permission of Barclays. Barclays offers premier investment banking products and services to its clients through Barclays Bank PLC. Barclays Bank PLC is authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority and is a member of the London Stock Exchange. Barclays Bank PLC is registered in England No. 1026167 with its registered office at 1 Churchill Place, London E14 5HP. Barclays Capital Securities Limited is authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority and is a member of the London Stock Exchange. Barclays Capital Securities Limited is registered in England No. 1929333 with its registered office at 1 Churchill Place, London E14 5HP. Barclays Capital Inc. is a US registered broker/dealer affiliate of Barclays Bank PLC and a member of SIPC, FINRA and NFA. Barclays Capital Inc. operates out of 745 Seventh Avenue, New York, NY 10019. Where required pursuant to applicable US laws, rules and/or regulations, Barclays Capital Inc. accepts responsibility for the distribution of this document in the United States to US Persons. Where a communication is being directed at persons who are professionals, it is directed at institutional investors in the US as defined by FINRA Rule 2210(a)(4).

BARX is a registered trademark of Barclays.

© Barclays 2019

BALXFAQs v14 | November 2019