

FAQs: Equities Electronic Order Handling

As of July 2023

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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 'LX FAQ' numbers are from the 'FAQs: Barclays ATS-LX' document available at barx.com/eqdisclosures.

1. Confidentiality of client information

Barclays has procedures in place to ensure the confidential treatment of clients' electronic trading information.

A. Electronic trading by Clients directly through Barclays Algos and Router

Only designated employees of the Electronic Trading business unit are able to regularly monitor individual client electronic trading flow through Barclays algorithmic trading strategies ("Algos") and smart order router ("Router"). The ability to monitor client electronic trading flow is administered through permission-based systems, with permissions managed by Supervisors. Certain other employees may have visibility in respect of specific orders depending on the nature of those orders as described below.

- Barclays traders managing the risk books of the firm and the sales traders that sit within the trading aggregation unit, do not have the ability to view clients' electronic trading flow, unless a client authorizes visibility, e.g., through the use of a trading product, the election by the client of coverage by a high-touch trader/sales trader or if the trader executes a client's order using Barclays Algos and Router as described in subsection D below.
- Generalist sales personnel do not have the ability to view client electronic trading flow.
- High-touch sales personnel do not have the ability to view client electronic trading flow, unless a client specifically requests to have a single point of contact for both high-touch and electronic coverage, or if a client otherwise authorizes visibility or the high-touch sales personnel executes a client's order using Barclays Algos and Router as described in subsection C below.
- Operations, technology, compliance, audit, risk and legal staff can view order information on a post-execution basis for surveillance and monitoring purposes. They also may request real-time order and revenue information on an as needed basis.
- On a post-execution basis, personnel within the Equities division and senior management are able to view client electronic trading revenue and, where necessary, to address client specific issues and trade details.
- Certain senior management employees may be permitted to view order information in accordance with the firm's internal controls and approval processes.
- Additionally, a client may choose to authorize additional Barclays' personnel to view its own electronic trading flow.
- BARX Book (or "BBOK") is Barclays' Single Dealer Platform and hosted by Nasdaq's OCEAN platform. It is accessible as a venue by the Barclays Algos and Router and also for sending directed orders. Certain authorized OCEAN personnel will have access to the client specific configuration/set-up, orders and executions specific to BARX Book and other BARX Book data for the purposes of servicing the product. This authorized access will be limited to personnel from OCEAN Operations, OCEAN Compliance, OCEAN Core Technology, OCEAN Surrounding Technology and OCEAN Business & Product Management teams.

B. Trading through a direct connection to LX

Please refer to the LX-ATS FAQs available at barx.com/eqdisclosures for further information on LX specific visibility/confidentiality.

C. Trading through a direct connection to BBOOK

Please refer to BARX Book FAQs available at barx.com/eqdisclosures for further information on BARX Book specific visibility/confidentiality.

D. Trading with Barclays Personnel

Barclays' electronic and high-touch sales trading personnel (including personnel who sit within the trading aggregation unit) and Barclays trading desks have the ability to execute a client's order using Barclays Algos and Router, which may place orders in LX as well as other venues. When these personnel place a client's order in the Algos or the Router, the desk that places the order, as well as the client's high-touch sales coverage, have the ability to monitor that individual order and resulting executions.

For additional information on personnel with access to confidential client information in LX, please see Part II, Item 6 of the LX Form ATS-N posted on the SEC's web page available at <https://www.sec.gov/divisions/marketreg/form-ats-n-filings.htm>.

2. 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.

3. 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, and a client's algorithmic and router settings.

For various types of information pertaining to executions in LX, please see LX FAQs #4. The LX-ATS FAQs documents is available at barx.com/eqdisclosures

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

- Near real-time trade monitoring through our Portfolio WebBench® analytics toolkit (may not available to all clients; for additional information, please contact your Barclays sales representative)
- Detailed reporting of routing results, including venue 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.

4. Payment for order flow/Rebates and fees

When trading US equities, Barclays may execute on exchanges, ATSS and off-exchange trading venues which may have no charge or may provide rebates for execution. Periodically, the amount of credits that Barclays receives from one or more such market centers may exceed the amount that Barclays is charged. None of these trading venues are operated by Barclays' affiliates. Clients may receive information regarding their execution and associated rebates and fees in detailed routing reports.

For information on fees related to trading in Barclays LX, please refer to LX FAQ 9.

5. Commissions and fees for electronic trading

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

For information on fees related to trading in Barclays LX, please refer to LX FAQ 9.

6. Irregular settlement of securities

In certain situations, a shortened or extended settlement may cause you to be a holder of record in respect of a corporate action or distribution on a record date on which you would not have been a holder of record had the relevant securities settled pursuant to the regular settlement cycle. Where Barclays has agreed to settle securities on an irregular settlement basis, Barclays reserves the right to reclaim any economic benefit accruing to you in respect of any corporate action (whether a stock split, merger consideration or otherwise) and any distribution (whether in cash or in kind and whether consisting of shares, rights or other property) that Barclays would have been entitled to receive by virtue of being the holder of record on the relevant record date had the shares settled according to the regular settlement cycle. Barclays reserves the right to bill you for any such economic benefit.

7. 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:

- Including their order flow in electronic volume advertisements (see FAQ 2)
- Participating in conditional order negotiations (see FAQ 13)

For LX-specific customizations, please refer to LX FAQs # 5 and the ATS-N filing for LX available at <https://www.sec.gov/divisions/marketreg/form-ats-n-filings.htm>.

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

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.

8. Platform enhancements

At any time, Barclays may implement enhancements to its equities electronic trading platform, which includes Barclays algorithms, router, and 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. Barclays may run periodic plant-wide experiments to evaluate the effectiveness of select features. Orders that are part of a control group in an experiment may or

may not have select features available, depending on the nature of the experiment. Once the testing of a new feature (or the removal of an existing feature) has been completed, Barclays will harmonize the availability of features across all clients Please contact your Barclays electronic sales representative for details on enhancements or new features currently being rolled out.

Algorithms

9. Algorithms and routing logic

Barclays' algorithms utilize the Router to route orders for execution. The Router (also available as a stand-alone strategy) is utilized by the algorithms in four Execution Modes: Ping, Sweep, Exchange Post and Dark Post. An order will go through Ping, Sweep and Exchange Post, in that order, depending on marketability. Dark Post must be explicitly elected on a router order. A Dark Post order will not trigger any other Execution Mode. Dark Post is currently used by the order placement logic within Barclays' algorithms by default. For complete details on which algorithms utilize which functionality please contact your Barclays sales representative.

Please note that VWAP, TWAP and With Volume algorithms are currently available within our new algo trading platform with others in progress of migrating. For more information, please see the "Next Generation Algorithms and Equities Electronic Order Handling" FAQs document available at barx.com/eqdisclosures or contact your Barclays sales representative with any questions with regards to your specific order flow.

Barclays is in the process of rolling out Hydra on its new trading platform. As Barclays prepares to roll it out more widely, internal traders and sales traders might use Hydra available on the new platform. Please speak to your sales representative if you have any questions.

10. Algorithm market data

The majority of Barclays' algorithms use SIP market data feeds when making decisions on order placement and pricing. However, two of Barclays' algorithms, Rapid and Spread Trader, utilize a combination of direct and SIP market data feeds. Please contact your Barclays sales representative for further details. Performance evaluation of algorithms

Performance evaluation of our algorithms is a continuous process. The performance of our algorithms is evaluated against several measures, which include but are not limited to, average slippage from the relevant benchmark (e.g., VWAP, arrival price); effective participation rate; and price movement before, during, and after the trade. Performance is also evaluated across various market capitalizations, spreads, durations, and order sizes. Outlier trades may be analyzed to identify potential improvements.

11. Information leakage prevention and anti-gaming protection

Barclays' algorithms employ various techniques to help minimize information leakage and avoid gaming activity. These techniques include, but are not limited to, the following:

A. Symbol-specific analytics

1. Volume profiles
2. Average spreads and quote depth
3. Volatility estimates

B. Dynamic scheduling and volume forecasting

1. Intraday real-time volume adjustments to react to deviations from typical volume profile

C. Chase protection

1. Symbol-specific block exclusion logic for all participation tracking
2. Symbol-specific volatility bands prevent algorithms from immediately chasing new price levels

D. Price impact detection

1. Real-time tracking and prevention of excessive market impact created by our orders

E. Randomization of Time/Size in child order placement

1. Release time of passive and aggressive child orders is randomized
2. Child order sizes are randomized and set to match order book dynamics

F. Dynamic Limit Pricing for Hidden Non-Displayed Orders

1. When routing pegged hidden orders, a local limit is applied to prevent unfavorable executions due to short-term market movements

Please note, not all techniques are used for all algorithms.

12. Internal algorithm use

In general, Barclays Equities sales and trading personnel who execute and facilitate client orders utilize the same suite of algorithms as those made available to clients, except when testing new functionality (see FAQ 8).

13. Conditional orders support

Barclays' algorithms support conditional orders to select venues (see Smart Order Router FAQ 4 for venues which support conditional orders).

Clients have the ability to opt out of a conditional-supported venue upon request. For more information on conditional order support, please contact your Barclays sales representative.

14. Capital Commitment Features

Automated capital commitment ("CapComm") features are available through Barclays' algorithmic and smart order routing strategies. Once the pre-determined execution threshold or criteria is reached and certain order conditions are met, the remainder of the order is facilitated by Barclays. For more information, please refer to the CapComm FAQs document available from your Barclays sales representative.

15. Location of Algos

Barclays Algos are hosted in Barclays' private data centers located at Equinix NY5 in Secaucus, NJ.

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