

Morgan Stanley's U.S. Equity Order Handling & Routing Practices

Frequently Asked Questions

(Last Updated: November 2018)

This document is part of Morgan Stanley & Co. LLC's ("Morgan Stanley") ongoing efforts to provide transparency to its clients about its business practices. The document is based on questions that Morgan Stanley typically receives from its clients and seeks to provide clients with a detailed understanding of Morgan Stanley's U.S. equity order handling and routing systems.¹

Morgan Stanley's primary objective in handling client orders is to deliver the best execution reasonably available under the circumstances. Morgan Stanley may execute client orders through a variety of means by accessing internal and/or external sources of liquidity.

If after reviewing this document you have additional questions, please contact your Morgan Stanley representative. The contents of this document are also available at www.morganstanley.com/disclosures/ and may be updated from time to time.

I. Equity Order Handling and Routing Practices

1. Please describe Morgan Stanley's general approach to order handling and routing of its clients' orders.

Morgan Stanley's order handling and routing systems seek to minimize signaling and maximize fill rates and execution quality. Morgan Stanley strives to provide transparency to clients about how its order handling and routing systems operate and has advocated publicly for improved regulation obligating meaningful public order handling disclosures.

2. Please provide a list of all sources of liquidity that Morgan Stanley's U.S. equities order handling and routing systems may access for client orders.

Morgan Stanley's order handling and routing systems are designed to access internal and/or external sources of liquidity in an attempt to achieve best execution. The liquidity sources that Morgan Stanley may access through such systems are: U.S. exchanges (both displayed and non-displayed liquidity); FINRA's Alternative Display Facility (ADF) participant(s) (currently no participants); Morgan Stanley internal dark pools (MS POOL, MS Trajectory Cross and MS RPOOL); external dark pools (currently BIDS, Instinet BlockCross, Instinet CBX, Intelligent Cross ATS, Deutsche Bank SuperX, Fidelity CrossStream, Goldman Sachs Sigma X2, JPM JPM-X, Level ATS, Virtu MatchIt and UBS ATS); select external liquidity providers (via Morgan Stanley's Alternative Liquidity Facility (ALF)); MS Automated Liquidity and principal liquidity provided at the close. Given the variety of means that Morgan Stanley may employ to attempt to achieve best execution, and absent instructions to the contrary, transactions may be executed on

¹ The information in this document may differ for Morgan Stanley & Co. LLC's retail broker-dealer offering. For this information, please contact your Morgan Stanley representative.

an agency, agency cross or principal basis or a combination of these. The configurations for your order flow can vary across various Morgan Stanley desks. Based on a variety of factors, including Morgan Stanley's discretion, interactions with such internal and external sources of liquidity may vary by client. If you have questions about the specific configurations for your order flow, please contact your Morgan Stanley representative.

3. Does Morgan Stanley receive payment for routing to external venues?

Certain venues offer cash credits for orders that provide liquidity to their books and charge explicit fees for orders that extract liquidity from their books (and certain venues invert this practice). The amount of credits that Morgan Stanley receives from one or more venues may exceed the amount that Morgan Stanley is charged. Morgan Stanley may also receive incremental pricing benefits from venues if certain volume thresholds are met.

4. In which of the external U.S. equity trading venues/sources of liquidity identified above does Morgan Stanley have a strategic ownership stake?

An affiliate of Morgan Stanley holds an indirect minority ownership stake in BIDS.

5. Is Morgan Stanley directly connected to all the exchanges or does it use other exchanges or broker-dealers to access certain exchanges?

Morgan Stanley is directly connected to all U.S. exchanges.

6. What market data feeds does Morgan Stanley use to route orders to the displayed markets?

Morgan Stanley uses direct exchange market data feeds (with depth of book visibility when available) from all displayed venues to which it routes. For backup and regulatory purposes (e.g., regulatory halts), Morgan Stanley's smart order routers also use the SIP feed.

7. How do Morgan Stanley's smart order routers access both displayed and non-displayed venues?

Morgan Stanley's smart order routers ("MS Routers") offer clients routing strategies for access to displayed and non-displayed liquidity. Smart Order Routing Technology ("SORT") provides access to displayed liquidity. NightVision, which is Morgan Stanley's dark router, provides access to non-displayed liquidity. Certain order types and routing strategies access to both displayed and non-displayed liquidity. MS Routers may also access certain Morgan Stanley internal sources of liquidity.

8. How do Morgan Stanley's smart order routers operate?

- a. SORT

SORT is designed to route marketable orders in a manner that seeks to maximize fill rates and minimize both quote fading and market signaling, including by using randomization. For client orders, SORT is designed to capture a contemporaneous snapshot of the exchanges that generate protected quotations under Regulation NMS and select external liquidity providers to which it routes (collectively, external displayed venues) and certain Morgan Stanley internal sources of

liquidity (i.e., MS POOL, MS RPOOL and MS Automated Liquidity). As part of this process, SORT uses direct market data feeds from external displayed venues to obtain multiple levels of market data depth (when available) for each security. In addition, based on its view of liquidity available in MS POOL and MS RPOOL at prices equal to or better than the then-current best bid and offer (“best bid and offer”), SORT may access such liquidity by sending an immediate or cancel order (“IOC”) to the extent it is eligible based on client configurations and/or instructions. SORT seeks to access venues in parallel to accessing MS POOL and MS RPOOL. This parallel routing is intended to allow SORT to access MS POOL and MS RPOOL while minimizing market signaling. SORT may also access MSAL depending on client configurations and/or instructions. MSAL is principal liquidity provided in an automated and anonymous manner by Morgan Stanley. Based on client configurations and/or instructions, SORT may also access ALF, which provides access to select external liquidity providers in response to indications of interest (IOIs) that they provide.

Subject to the above, SORT primarily determines which sources of liquidity to access based upon price. If there is more aggregate liquidity available than is necessary to fill the order, the factors SORT uses when determining which venue(s) to select for marketable orders include, but may not be limited to, some or all of the following: price, health of the market, liquidity size, venue type, fees and rebates, and randomization factors. Certain configurations of SORT rank these factors, as well as the priority for accessing multiple sources of liquidity, differently. For instance, one configuration places a higher weight on fees and rebates and may prioritize inverted external displayed venues (i.e., those which typically provide a rebate for taking flow) over other sources of liquidity. If you have questions about the specific configurations for your order flow, please contact your Morgan Stanley representative.

For non-marketable orders, SORT displays all or a portion of orders on exchanges and does not post in any dark pools. SORT may post on multiple exchanges based on order size and the prevailing trading environment. The factors SORT uses when determining which exchange(s) to select for non-marketable orders include, but may not be limited to, some or all of the following: queue length, trade frequency, quote volatility, spread, historical market share, exchange fees, rebates and tiers, and randomization factors. In the event that SORT does not display the whole order quantity, it will use reserve quantities on exchanges or may access MSAL. Certain configurations of SORT rank these factors, as well as the priority for accessing multiple sources of liquidity, differently. For instance, one configuration places a higher weight on exchange fees, rebates and/or tiers and may prioritize posting liquidity on rebate paying venues. If you have questions about the specific configurations for your order flow, please contact your Morgan Stanley representative.

b. NightVision

NightVision is used to access MS POOL, MS RPOOL, select external dark pools, and non-displayed liquidity on displayed venues. NightVision will send an order (or portion(s) of an order) to some or all of these venues and may reallocate based on executions received from these venues. Based on its view of liquidity available in MS POOL and MS RPOOL at prices equal to or better than the best bid and offer, NightVision may access such liquidity by sending an IOC or

day order to the extent it is eligible based on client configurations and/or instructions. NightVision seeks non-displayed liquidity in external dark pools and external displayed venues by sending IOC or day orders. Based on client configurations and/or instructions, NightVision may send conditional indications to certain venues. By default, NightVision will initially route conditional indications to MS RPOOL, to the extent eligible based on client configurations and/or instructions, before routing conditional indications to the external venues, thereby minimizing the risk of market signaling associated with sending orders to multiple venues.

If you have questions about Morgan Stanley's other routing strategies, please contact your Morgan Stanley representative.

9. What anti-gaming controls does Morgan Stanley have in place?

Morgan Stanley continues to invest significant capital in its order handling and routing systems. Direct feeds over wireless networks combined with low latency order routing technology have resulted in high fill rates. SORT is designed to route marketable orders in a manner intended to maximize fill rates and minimize both quote fading and market signaling.

For MS POOL, Morgan Stanley employs measures such as restricting order types, not accepting IOCs from participants and monitoring median resting periods to minimize simulated IOCs. In addition, MS POOL does not transmit IOIs. MS POOL and MS RPOOL do not accept "post only" orders. The section below called Morgan Stanley Dark Pools contains additional information about anti-gaming controls for MS POOL, MS RPOOL and MS Trajectory Cross.

For external dark pools that Morgan Stanley accesses, Morgan Stanley may place certain constraints on orders such as minimum fill quantities (in terms of number of shares and/or notional value). Morgan Stanley also monitors fill rates for such venues, evaluates the dark pools that it accesses and requires them to represent in writing that they take certain measures to mitigate the risk of signaling or gaming of its client orders in their respective dark pools. The section below called External Dark Pools contains additional information about anti-gaming controls for the external dark pools that Morgan Stanley accesses.

Morgan Stanley also monitors fill rates for external liquidity providers. Morgan Stanley evaluates the providers that it accesses and the quality of executions for orders that it sends to such providers. Morgan Stanley also requires external liquidity providers to confirm in writing that Morgan Stanley's client orders and information regarding those orders are not used for the purpose of trading ahead of such orders and that external liquidity providers have established policies and procedures reasonably designed to preserve the anonymity of Morgan Stanley's orders.

10. Does Morgan Stanley provide access to external liquidity providers?

Yes. Based on client configurations and/or instructions, SORT may access select external liquidity providers via ALF in response to IOIs that they provide. Morgan Stanley expects such external liquidity providers to provide high fill rates and monitors such fill rates. SORT does not blindly ping liquidity providers prior to sending orders to other external displayed venues.

11. Does Morgan Stanley send outbound IOIs from anywhere within its electronic trading infrastructure (*i.e.*, from its dark pools, smart order routers or algorithms) or messages similar to an IOI?

No, except that MS RPOOL accepts conditional indications and sends firm up requests when there is a conditional match. See also FAQs regarding conditional indications.

12. Does Morgan Stanley send any orders (e.g., IOC) related to client orders in response to inbound IOIs (or messages similar to an IOI) from external liquidity providers?

Yes, based on client configurations and/or instructions, Morgan Stanley may send orders to select external liquidity providers (via ALF) in response to IOIs that they provide. Morgan Stanley expects such external liquidity providers to provide high fill rates and monitors such fill rates. See also FAQs regarding conditional indications.

13. Does Morgan Stanley accept inbound conditional indications?

MS RPOOL accepts conditional indications. The section below called Morgan Stanley Dark Pools contains additional information about conditional indication functionality for MS RPOOL.

14. Does Morgan Stanley send outbound conditional indications?

Yes, based on client configurations and/or instructions, Morgan Stanley may send conditional indications to BIDS, Instinet BlockCross, Level ATS and MS RPOOL.

NightVision is designed to maximize fill size and reduce the likelihood of receiving multiple, simultaneous conditional firm-up requests by both staggering the initial conditional placement across venues and managing conditional placement relative to firm order placement. When staggering conditional placement across venues, NightVision ranks conditional venues in order of decreasing amount of observed recent fill activity before sending conditional indications in a sequential fashion. Should NightVision receive multiple simultaneous firm-up requests, firm order quantity is directed according to a prioritization process that initially routes to MS RPOOL, which seeks to minimize the risk of market signaling associated with sending orders to multiple venues.

15. Does Morgan Stanley send blind IOCs (*i.e.*, blind ping) to external liquidity providers prior to routing orders to the displayed markets?

No.

16. Does Morgan Stanley allow re-routing of client orders by external venues (*i.e.*, does Morgan Stanley send routable orders)?

Non-marketable orders may be sent to the exchanges as routable orders so that if the order becomes marketable on another exchange, the order can be routed to that other exchange for execution. Only a small portion of orders, however, are actually routed by exchanges for this reason. Morgan Stanley may also send routable orders in an outage situation. In the absence of explicit client instructions, Morgan Stanley instructs exchanges not to route its orders to venues that do not display protected quotations, including dark pools and other dark liquidity providers.

17. Can clients opt out of interacting with Morgan Stanley principal liquidity?

Yes.

18. Does Morgan Stanley identify the capacity in which it acted on fills?

Yes.

19. Does Morgan Stanley provide the actual execution venue on fills?

Yes. However, with respect to routable orders sent to the exchanges, if routed by the initial exchange to another exchange for execution, the actual executing exchange may not be passed back on the fill by the initial exchange.

20. Does Morgan Stanley provide MIC codes on fills?

Yes.

21. Can Morgan Stanley provide liquidity tags on fills to indicate whether orders took or provided liquidity?

Yes, where supported by the execution venue.

22. Can Morgan Stanley aggregate executions for multiple orders and provide back a single fill?

Yes. However, given that a single aggregated fill represents two or more orders that can be executed on multiple venues, possibly in a mixed capacity (both as agent and principal) and can both take and provide liquidity, tags indicating capacity, execution venue, MIC and liquidity may not be passed back on such fills.

If you would like details regarding the underlying executions, please contact your Morgan Stanley Representative.

23. Can Morgan Stanley show a liquidity map for a client's order flow that shows venues and the percentage of liquidity provided versus taken at each venue?

Yes.

24. Can Morgan Stanley's algorithmic and routing strategies be customized?

Yes. Morgan Stanley can customize algorithmic and routing strategies upon client request.

25. Who at Morgan Stanley and its affiliates can access open client order information?

Access is limited to account coverage, personnel handling client orders, and supervisors, as well as certain legal, compliance, risk management, senior management and other support personnel in the performance of their responsibilities. Other clients, traders and sales traders do not have access to this information. Depending on respective personnel responsibilities, there are different levels of permissioned access pursuant to our internal policies.

26. How does Morgan Stanley use client information?

Protecting the confidentiality and security of client order, execution, position and related information is an important part of how Morgan Stanley conducts its business, and Morgan Stanley has implemented controls that are reasonably designed to protect such information. Morgan Stanley may use such information for a variety of purposes including client coverage, supervision, risk management, liquidity provision, and business strategy, and may disclose such information in connection with its global regulatory obligations, pursuant to client instructions and in performing normal course brokerage functions. Morgan Stanley may also use or disclose internally created aggregated and anonymized information for these purposes and in connection with other products and services.

27. How does Morgan Stanley handle client orders when specific execution instructions for Tag 18 regarding Held or Not Held are not provided?

If Morgan Stanley does not receive Held or Not Held order instructions on the order, such order will be treated as Not Held.

28. Does Morgan Stanley accept market orders? If so, how are market orders handled?

Morgan Stanley accepts market orders. However, to mitigate the risk of adverse market impact, Morgan Stanley may place limit prices on your order when accessing the market, including in circumstances when you direct your market order to a particular destination. Therefore, it is possible that your market order may not get completely filled.

29. Does Morgan Stanley support minimum fill quantity on orders?

With respect to MS Routers, NightVision supports minimum fill quantity instructions designated on orders, while SORT does not.

Orders sent to MS POOL and MS RPOOL can be designated with a minimum fill quantity instruction. MS POOL and MS RPOOL do not aggregate multiple contra-side orders to satisfy a minimum fill quantity on a single order.

Conditional indications sent to MS RPOOL can be designated with a minimum fill quantity instruction. MS RPOOL does not aggregate multiple contra-side orders or conditional indications to satisfy a minimum fill quantity on a single conditional indication in MS RPOOL.

II. Morgan Stanley Dark Pools

30. Please describe Morgan Stanley's internal dark pools.

MS POOL is a real-time continuous crossing dark liquidity pool. It crosses eligible orders at or within the then-current best bid and offer, attempting midpoint execution or as close to midpoint as possible. MS POOL employs price/capacity/size/time priority, which encourages size and deemphasizes speed.

MS RPOOL is a real-time continuous crossing dark liquidity pool that anonymously matches orders from SEC registered broker-dealer clients on behalf of retail customers (i.e., retail brokers), eligible institutional customers of Morgan Stanley and its affiliates including institutional customers who are SEC registered investment advisers, pension funds, endowments and asset managers (i.e., institutional customers), and Morgan Stanley and its affiliates acting as or on behalf of eligible retail brokers or eligible institutional customers, or acting as principal. All executions in MS RPOOL occur at midpoint of the best bid and offer, providing price improvement to all orders matched in MS RPOOL. MS RPOOL also accepts conditional indications that represent a non-firm willingness to transact.

MS Trajectory Cross is a dark pool designed to provide crosses over time intervals for eligible orders that are traded via certain Morgan Stanley algorithms. Potential crosses are determined based on overlap of the individual order trajectories and executions will receive volume weighted average price ("VWAP") pricing for the relevant time interval.

31. How can Morgan Stanley's dark pools be accessed?

MS POOL and MS RPOOL may be accessed directly. MS POOL and MS RPOOL may also be accessed indirectly via MS Routers and Morgan Stanley algorithms.

MS Trajectory Cross may only be accessed indirectly via certain Morgan Stanley algorithms.

32. What market data feeds do Morgan Stanley's dark pools use?

MS POOL and MS RPOOL use direct exchange market data feeds to determine the best bid and offer. For backup and regulatory purposes (e.g., regulatory halts), MS POOL and MS RPOOL use the SIP feeds.

MS Trajectory Cross executes orders using an interval VWAP price calculated based on eligible trades reported to the consolidated tape.

33. Describe the types of participants in Morgan Stanley's dark pools.

Clients, traders and sales traders of Morgan Stanley and its affiliates can access MS POOL and MS Trajectory Cross.

SEC registered broker-dealer clients on behalf of retail customers (i.e., retail brokers), eligible institutional customers of Morgan Stanley and its affiliates including institutional customers who are SEC registered investment advisers, pension funds, endowments and asset managers (i.e., institutional customers), and Morgan Stanley and its affiliates acting as or on behalf of eligible retail brokers or eligible institutional customers, or acting as principal can access MS RPOOL.

34. Does Morgan Stanley allow participants to opt out of interacting with certain flow in its dark pools?

Participants have the ability to opt out of interacting with principal orders in MS POOL. Participants have the ability to opt out of interacting with principal orders and principal conditional indications in MS RPOOL and MS Trajectory Cross.

Morgan Stanley also allows participants who are not classified as “professional traders” to opt out of interacting with participants classified as “professional traders” in MS POOL.

Orders that access MS RPOOL, by default, do not interact with conditional indications. Participants can elect to have their orders interact with conditional indications in MS RPOOL. Conditional indications cannot opt out of interaction with orders or other conditional indications in MS RPOOL. A trader or sales trader acting on behalf of clients is considered a participant.

35. How does Morgan Stanley determine which participants will be classified as “professional traders” in MS POOL?

A participant can be classified as a professional trader based on the nature and frequency of that participant’s activities (or for a new participant, its anticipated activities) in MS POOL. The primary factor used to determine whether a participant is a professional trader is average message count.

36. How do Morgan Stanley’s dark pools prioritize orders?

MS POOL employs price/capacity/size/time priority, which encourages size and deemphasizes speed (rather than prioritizing time over size). For MS POOL, orders from participants not classified as “professional traders” are given priority over both principal orders and orders from participants classified as “professional traders”. An order pegged to the near side of the best bid and offer that has ever been repriced to a peg price other than its limit price yields time priority to other orders with the same price, capacity and size.

Orders and conditional indications in MS RPOOL that are eligible to participate at midpoint of the best bid and offer are prioritized based on type of interest (i.e., orders before conditional indications), capacity, size, and then time. However, orders and conditional indications subject to a firm-up period are ineligible to interact with other orders and conditional indications during that period.

MS Trajectory Cross is designed to prioritize client conditional indications over principal conditional indications. When there are multiple conditional indications on the same side with the same capacity, first eligible size will be considered and then time of receipt will be considered by MS Trajectory Cross to determine the order in which conditional indications are paired. Given the forward-looking nature of the crossing rounds, certain assumptions are made regarding the forward-looking volume and price when determining eligible quantity for each crossing round. As a result, conditional indications (or portions thereof) that may otherwise be eligible to be paired in MS Trajectory Cross may not get paired in a crossing round. For example, where a conditional indication with a limit is priced close to the then-current market price for that security, MS Trajectory Cross may not consider all or a portion of that conditional indication as eligible for a crossing round. This applies irrespective of whether the conditional indication is for a client order or a principal order.

37. What order types are supported by Morgan Stanley's dark pools?

MS POOL accepts orders with and without limit prices (including buy, sell, short sell, and short sell exempt orders), which may also be designated with a peg instruction. MS POOL accepts day orders and IOCs. Only MS Routers and certain other automated Morgan Stanley trading systems are permitted to send IOCs to MS POOL to seek an immediate match. If liquidity is available in MS POOL at a price that is at or within the best bid and offer from markets that display protected quotations as defined within Regulation NMS, MS Routers, based on their view of liquidity in MS POOL, may access such liquidity by sending an IOC to MS POOL. Participants accessing MS POOL directly are permitted to enter day orders, but not IOCs.

MS RPOOL accepts orders with and without limit prices (including buy, sell, short sell, and short sell exempt orders). MS RPOOL accepts day orders and IOCs. MS RPOOL also accepts conditional indications with and without limit prices (including buy, sell, short sell, and short sell exempt conditional indications).

MS Trajectory Cross accepts day orders and conditional indications from certain Morgan Stanley algorithms with and without limit prices that are eligible to be matched in MS Trajectory Cross.

MS POOL, MS RPOOL and MS Trajectory Cross do not accept "post only" orders.

38. Describe the conditional indication functionality for MS RPOOL.

Participants who send conditional indications receive firm-up requests from MS RPOOL when eligible orders or conditional indications that match with such participant's conditional indication are available in MS RPOOL (i.e., a conditional match). When there is a conditional match, the conditional indication and the contra-side order or conditional indication enter into a firm-up period during which both the conditional indication and the contra-side order or conditional indication can only be matched in MS RPOOL against each other. A conditional match may occur between two conditional indications, or between a conditional indication and an order that has elected to interact with conditional indications. During the firm-up period, MS RPOOL sends firm-up request(s) in response to the conditional indication(s). If executable order(s) are sent to MS RPOOL in response to the firm-up request(s) during the firm-up period, MS RPOOL will

execute the orders. Orders that participate in a conditional match that do not result in an execution remain eligible for matching with other contra-side orders or conditional indications after the end of the firm-up period. Conditional indications expire once they have participated in a conditional match.

Firm-up requests are sent to MS RPOOL participants, MS Routers, or algorithms, as applicable, when a conditional match becomes available. The firm-up request includes symbol, side and a firm-up quantity. When responding to a conditional indication sent to MS RPOOL by MS Routers or algorithms, the firm-up quantity represents the actual size of the conditional match in order to most efficiently manage messaging and queue position on other markets. To minimize information leakage, when responding to a conditional indication sent directly to MS RPOOL by an MS RPOOL participant, the firm-up quantity represents the quantity of such MS RPOOL participant's conditional indication.

39. Can clients specify a minimum fill quantity in MS POOL and MS RPOOL? If so, will MS POOL and MS RPOOL aggregate orders to satisfy the minimum fill quantity?

Orders sent to MS POOL and MS RPOOL can be designated with a minimum fill quantity instruction. MS POOL and MS RPOOL do not aggregate multiple contra-side orders to satisfy a minimum fill quantity on a single order.

Conditional indications sent to MS RPOOL can be designated with a minimum fill quantity instruction. MS RPOOL does not aggregate multiple contra-side orders or conditional indications to satisfy a minimum fill quantity on a single conditional indication in MS RPOOL.

40. Does the minimum fill quantity constraint apply to just the first execution or to every execution?

The minimum fill quantity constraint applies to every execution in MS POOL and MS RPOOL, except when the remainder of the order is less than the minimum fill quantity, in which case MS POOL and MS RPOOL will execute that quantity.

The minimum fill quantity constraint applies to every conditional match in MS RPOOL.

41. Do Morgan Stanley's dark pools send outbound IOIs (or messages similar to an IOI)?

No. MS RPOOL and MS Trajectory Cross will accept conditional indications and will send firm up requests when there is a conditional match.

42. During which hours do Morgan Stanley's dark pools execute?

Morgan Stanley's dark pools operate on regular business days during normal trading hours (typically 9:30 a.m. to 4:00 p.m. Eastern Time). MS POOL and MS RPOOL generally do not trade a stock, and MS Trajectory Cross generally will not initiate a crossing round, until there is an execution for that stock on the primary exchange.

Morgan Stanley may suspend crossing in its dark pools during market hours under anomalous conditions.

43. Does Morgan Stanley provide preferential access to its dark pools or to categories of flow in its dark pools for a fee? Do orders in MS POOL from other brokers with which Morgan Stanley has a mutual access agreement receive preferential treatment?

No.

44. Where are Morgan Stanley's dark pool servers located and does Morgan Stanley permit participants to cross-connect?

The primary location of the MS POOL and the MS RPOOL trading infrastructure is leased space in the NY5 data center in Secaucus, NJ. Morgan Stanley allows any class of participant to cross-connect to the MS POOL and the MS RPOOL trading infrastructure. There is a common point of entry for all participants who cross-connect to MS POOL and to MS RPOOL.

The MS Trajectory Cross trading infrastructure is located in data centers in New Jersey and will soon be located in the NY5 data center in Secaucus, NJ. MS Trajectory Cross is only accessible indirectly via certain Morgan Stanley algorithms. Accordingly, cross-connections are not available for MS Trajectory Cross.

45. Does Morgan Stanley offer co-location in Morgan Stanley's dark pool cages?

No.

46. How do Morgan Stanley's dark pools handle odd lot and mixed lot orders?

MS POOL and MS RPOOL reject odd lot orders. MS POOL and MS RPOOL cancel the odd lot portion of mixed lot orders after the round lot portion is fully executed.

MS RPOOL rejects odd lot conditional indications. MS RPOOL accepts mixed lot conditional indications.

MS Trajectory Cross accepts both odd lot and mixed lot conditional indications and orders, but only the round lot portion of mixed lot conditional indications are eligible to be paired and only the round lot portion of mixed lot orders are eligible to be matched in MS Trajectory Cross. Odd lot orders and the odd lot portion of mixed lot orders will continue to be traded outside of MS Trajectory Cross.

47. Do MS POOL and MS RPOOL execute in a locked or crossed market?

MS POOL and MS RPOOL do not execute with respect to securities that are the subject of a locked or crossed market.

48. What is the MPID, the MIC code and the clearing number for MS POOL?

MS POOL's MPID and MIC are MSPL. The DTCC clearing number is 0050.

49. What is the MPID, MIC code and clearing number for MS RPOOL?

MS RPOOL's MPID and MIC are MSRP. The DTCC clearing number is 0050.

50. What is the MPID, MIC code and clearing number for MS Trajectory Cross?

MS Trajectory Cross's MPID and MIC are MSTX. The DTCC clearing number is 0050.

51. Do Morgan Stanley's dark pools employ a maker-taker pricing model or provide rebates to solicit order flow?

No.

52. Do Morgan Stanley's dark pools charge different rates for access to different types of order flow?

No.

53. What is the average daily volume of Morgan Stanley's dark pools?

FINRA publishes alternative trading system ("ATS") trade and volume information on its website, accessible via this link: <https://otctransparency.finra.org/>

54. What anti-gaming controls does Morgan Stanley have in place for MS POOL?

MS POOL employs measures such as restricting order types, not accepting IOCs from participants and not transmitting IOIs, among other things. MS POOL employs price/capacity/size/time priority, which encourages size and deemphasizes speed. MS POOL rejects odd lot orders and cancels the odd lot portion of mixed lot orders after the round lot portion is fully executed. MS POOL does not accept "post only" orders.

In MS POOL, Morgan Stanley also allows participants who are not classified as "professional traders" to opt out of interacting with participants classified as "professional traders", but participants classified as "professional traders" cannot opt out of interacting with each other. Orders sent to MS POOL can be designated with a minimum fill quantity instruction. Orders from participants not classified as "professional traders" are given priority over orders from participants classified as "professional traders." In addition, Morgan Stanley reviews activity of MS POOL participants and may take action, which may include denial of access.

55. What anti-gaming controls does Morgan Stanley have in place for MS RPOOL?

All executions in MS RPOOL occur at midpoint of the best bid and offer, providing price improvement to all orders matched in the pool. MS RPOOL does not accept "post only" orders.

Morgan Stanley monitors firm-up rates for participants whose conditional indications receive firm-up requests.

56. What anti-gaming controls does Morgan Stanley have in place for MS Trajectory Cross?

MS Trajectory Cross does not raise the type of concerns commonly associated with continuous match dark pools that permit direct access and execute orders based on the best bid and offer. Access to MS Trajectory Cross is only available indirectly through certain Morgan Stanley

algorithms. Orders are eligible to execute in MS Trajectory Cross when there is an overlapping trajectory of algorithmic orders that would otherwise trade in the market. Executions in MS Trajectory Cross are based on VWAP pricing over a time interval.

57. Do Morgan Stanley's dark pools execute orders for stocks that may be suspended for purposes of the 5% volume threshold of Regulation ATS, restricted and/or halted?

No. MS POOL and MS RPOOL will accept orders for stocks that are halted and will resume crossing in those stocks once the halt is lifted. MS POOL rejects orders for stocks that have been suspended for purposes of the 5% volume threshold of Regulation ATS and for restricted stocks. MS RPOOL rejects orders and conditional indications for stocks that have been suspended for purposes of the 5% volume threshold of Regulation ATS and for restricted stocks.

MS Trajectory Cross does not initiate a crossing round for halted or restricted stocks. If a stock becomes halted or restricted during a crossing round, MS Trajectory Cross will cancel the crossing round.

III. External Dark Pools

58. What external dark pools does Morgan Stanley currently access?

Morgan Stanley currently accesses the following external dark pools: BIDS, Instinet BlockCross, Instinet CBX, Intelligent Cross ATS, Deutsche Bank SuperX, Fidelity CrossStream, Goldman Sachs Sigma X2, JPM JPM-X, Level ATS, Virtu MatchIt and UBS ATS.

59. How does Morgan Stanley evaluate new dark pools for addition to its dark pool router?

Morgan Stanley carefully evaluates potential new dark pool providers to assess their order handling and execution practices and whether they will handle our orders in the manner that Morgan Stanley instructs. As a result of this evaluation process, Morgan Stanley does not access every available dark pool.

60. Do the external dark pools that Morgan Stanley accesses aggregate orders to fulfill minimum quantity, as opposed to fulfilling minimum quantity with a single order?

Morgan Stanley has opted out of this functionality for those third party dark pools that permit us to opt out. A client can also opt its orders out of accessing one or more dark pools that might aggregate in this manner.

61. Do the external dark pools that Morgan Stanley accesses execute at prices other than mid-point?

Yes. External dark pools have different crossing and price improvement logic; however, most support midpoint pegged orders. If clients seek to restrict executions to midpoint only or better, Morgan Stanley has the ability to send midpoint pegged orders on their behalf to those external dark pools that support the order type.

62. Do the external dark pools that Morgan Stanley accesses allow executions to take place prior to a stock's opening print on the primary exchange?

Morgan Stanley routes to external dark pools in a manner designed to receive executions during regular trading hours.

63. Has Morgan Stanley stopped routing to any external dark pools?

Yes, as a result of Morgan Stanley's analysis of the executions received, low fill rates and/or based on regulatory actions or reputational concerns.

64. Can clients opt out of any external dark pools?

Yes.

65. What is the average daily volume of the external dark pools Morgan Stanley accesses?

FINRA publishes ATS trade and volume information on its website, accessible via this link: <https://otctransparency.finra.org/>

66. What anti-gaming controls does Morgan Stanley have in place for external dark pools?

Morgan Stanley may place certain constraints on orders that it routes to external dark pools such as minimum fill quantities (in terms of number of shares and/or notional value), where available. Morgan Stanley also monitors fill rates for such venues, evaluates the dark pools that it accesses and requires them to represent in writing that they take certain measures to mitigate the risk of signaling or gaming of Morgan Stanley's client orders in their respective dark pools. Morgan Stanley does not post orders in external dark pools that primarily use the SIP feed.

This information is being provided at your request for your exclusive use to aid in your understanding and evaluation of Morgan Stanley's U.S. equity order handling and routing systems. This information is proprietary to Morgan Stanley and describes current practices, which may change without notice. Morgan Stanley welcomes a conversation with you about this subject.