



A State Street Company

Accessing Global Fixed Income Liquidity and Auto-Execution Capabilities from MarketAxess in Charles River IMS

Traders and portfolio managers can source liquidity directly through the Charles River Order and Execution Management System (OEMS) and Inventory Hub for fixed income securities across the U.S., Europe, Africa, Latin America and Asia-Pacific via MarketAxess. The Charles River Inventory Hub aggregates and distributes inventory Runs and Axes from a number of the largest dealers and venues. Clients can view this inventory in the OEMS, receive updated indications of interest (IOIs) and quotes from dealers, and place orders for a full range of products and asset classes.

MarketAxess Provides Charles River Clients with Access to Global Liquidity Across Asset Classes

Region	Asset Classes
U.S.	<ul style="list-style-type: none"> • Investment Grade • High Yield • Agencies • Treasuries • Munis
Eurobonds	<ul style="list-style-type: none"> • Euro and Sterling • U.S. Dollar-denominated European corporates • SSA's and non-core European currencies • Covered bonds
Emerging Markets	<ul style="list-style-type: none"> • Fixed income securities in more than 25 currencies across Africa, Latin America and APAC
Global	<ul style="list-style-type: none"> • Credit Default Swaps • Leveraged Loans

Note: not all asset classes available for Auto-X functionality.



Automated Trading with Auto-X™

Charles River also integrates MarketAxess' Auto-X trading functionality, enabling clients to seamlessly auto-execute orders, deliver trade allocations to dealer counterparties and receive allocation acknowledgements in an STP workflow. Traders specify criteria including trade size, liquidity and level in the OEMS and Auto-X evaluates these criteria against bids and offers, including checks for outlier prices, then automatically executes a message to a dealer. MarketAxess designed Auto-X to increase trading efficiency by tapping into the diverse sources of liquidity available in the Open Trading™ marketplace and reduce execution costs by utilizing Composite+™ pricing tool.



An Aggregated, Venue and Dealer Agnostic View of Liquidity Helps Traders and Portfolio Managers:

- Reduce execution costs and facilitate price discovery by sourcing bids and offers from a broad range of venues and dealers
- Make more informed decisions on when and where to place trades
- Automate quote capture off the Indicative Price view
- Save the significant cost and effort required to establish FIX connectivity with multiple venues and dealers

About MarketAxess

MarketAxess operates a leading, institutional electronic trading platform delivering expanded liquidity opportunities, improved execution quality and significant cost savings across global fixed-income markets. A global network of over 1,800 firms, including the world's leading asset managers and institutional broker-dealers, leverages MarketAxess' patented trading technology to efficiently trade bonds. MarketAxess' award-winning Open Trading™ marketplace is regarded as the preferred all-to-all trading solution in the global credit markets, creating a unique liquidity pool for a broad range of credit market participants. Drawing on its deep data and analytical resources, MarketAxess provides automated trading solutions, market data products and a range of pre- and post-trade services. MarketAxess is headquartered in New York and has offices in London, Amsterdam, Boston, Chicago, Los Angeles, Miami, San Francisco, São Paulo, Hong Kong and Singapore. For more information, please visit www.marketaxess.com.

Charles River Development, A State Street Company

Investment firms, asset owners, wealth managers, hedge funds and insurers in more than 30 countries rely on Charles River's front and middle office investment management platform to manage more than US\$30 Trillion in assets. Together with State Street's middle and back office capabilities, Charles River's cloud-deployed software technology forms the foundation of State Street AlphaSM. The Charles River Investment Management Solution (Charles River IMS) is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. Charles River's growing partner ecosystem enables clients to seamlessly access external data and analytics, applications and liquidity venues that support the demands of their product and asset class mix. Headquartered in Burlington, Massachusetts, we serve clients globally with more than 1,000 employees in 11 regional offices. For more information, please visit www.crd.com.

(Statistics as of February 2021)

About State Street Corporation

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*Assets under management as of December 31, 2020 includes approximately \$75 billion of assets with respect to SPDR® products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated.

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