



Northfield Portfolio and Risk Analytics in Charles River IMS

Charles River clients can now access Northfield Portfolio and Risk Analytics from the Charles River Investment Management Solution (**Charles River IMS**). In combination with Charles River's portfolio management, risk and attribution capabilities, Northfield's equity, fixed income, REIT, private equity/debt, real estate, infrastructure, and multi-asset factor models enable firms to identify, measure and model risk across the front and middle office on one platform.

The models support both absolute and relative return strategies and cover all traded securities and illiquid assets globally. The Northfield Portfolio Optimizer enables managers to construct portfolios that deliver more return for each level of risk while incorporating manager preferences and market outlook. Additionally, Northfield's optimizer and risk models can explicitly account for non-normal return distributions that arise in many portfolios, including credit risk, counterparty risk, options and emerging markets.

Most Northfield risk models are each available in two versions that share the same factor structure. **The Risk Systems That Read®** process blends news flow, implied volatility cross-sectional dispersion, and historical relationships to provide traders and quants with novel and differentiated near-horizon risk forecasts.

Leveraging Charles River's single data model and portfolio manager workbench, Northfield Portfolio & Risk Analytics help Investment firms, asset owners, insurers and wealth managers construct and manage portfolios tailored to the asset classes and geographies they trade in.

Sector	Benefit
Institutional Asset Manager	Access broad range of factor models for public and private assets
Monitor and analyse portfolio impact of transaction costs	Manage all funds, strategies and accounts on a single enterprise platform
Plan Sponsors & Asset Owners	Provide an enterprise view of the overall risk across all public and private assets
Wealth Managers & Family Offices	Enables tax efficient portfolio optimization and house holding

Northfield Portfolio & Risk Analytics in Charles River IMS



Northfield Portfolio & Risk Analytics in Charles River IMS		
Risk Modeling	Northfield Equity Models	<ul style="list-style-type: none"> • Global Hybrid Equity Risk • Single Country and Regional Hybrid Equity • US Fundamental and Macroeconomic Equity • US Short Term Equity • XRD Global Double Hybrid Equity Risk
	Northfield Adaptive Near Horizon Risk Models	<ul style="list-style-type: none"> • Daily quantified news conditioning of both factor risk and security specific risk • Custom forecast horizon blending
	Fixed Income & Multi-Asset Class Risk Models	<ul style="list-style-type: none"> • Gain more granular and accurate views of entity-specific risk • Measure and monitor risk budgets • Validate risk assumptions for exposures across similar sectors/ ratings • Model all corporate and non-corporate credit risk across portfolios • Deconstruct portfolio risk at any required level of granularity
	Northfield Real Asset Models	<ul style="list-style-type: none"> • US and Global REIT • Real Estate, Infrastructure, Private Debt and Equity
Portfolio Construction	Northfield Portfolio Optimizer	<ul style="list-style-type: none"> • Incorporate transaction costs, taxes, and wide range of user specified constraints • Performant and scalable mass customization and automation
Trading Analytics	Liquidity & Trading Cost Estimation	<ul style="list-style-type: none"> • Analyze how liquidity imbalances impact trading costs and market prices • Can be extended to any market around the world

About Northfield

Northfield is a market leader in providing investment professionals analytical and operating efficiency tools to enhance individual portfolio and firm-wide performance. Founded in 1985, Northfield has developed open, analytical models to identify, measure and manage risk. These risk models cover most marketable securities traded world-wide. Based upon sound investment theory, Northfield's products and services have stood the test of time from users within the global institutional investment community. With over 200 clients worldwide with offices in Boston, Chicago, London and Tokyo, Northfield strives to be a preferred partner for institutional investors and asset managers. For more information, please visit www.northinfo.com.

About Charles River Development, A State Street Company

Investment and wealth managers, asset owners and insurers in over 30 countries rely on Charles River IMS to manage USD \$59 Trillion in assets. Together with State Street's middle and back office services, Charles River's cloud-based front office technology forms the foundation of State Street Alpha®. Charles River helps automate and simplify the 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 partner ecosystem enables clients to access the data, analytics, application and liquidity providers that support their product and asset class mix. With more than 120% increase in headcount over the last 5 years, Charles River serves clients in 11 regional offices. Learn more at crd.com (Statistics as of January 2024)

About State Street Corporation

State Street Corporation (NYSE: STT) is one of the world's leading providers of financial services to institutional investors including investment servicing, investment management and investment research and trading. With \$41.8 trillion in assets under custody and/or administration and \$4.1 trillion* in assets under management as of December 31, 2023, State Street operates globally in more than 100 geographic markets and employs approximately 46,000 worldwide. For more information, visit State Street's website at statestreet.com.

* Assets under management as of December 31, 2023 includes approximately \$64 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.

Charles River Development - A State Street Company is a wholly owned business of State Street Corporation (incorporated in Massachusetts).

This document and information herein (together, the "Content") is subject to change without notice based on market and other conditions and may not reflect the views of State Street Corporation and its subsidiaries and affiliates ("State Street"). The Content is provided only for general informational, illustrative, and/or marketing purposes, or in connection with exploratory conversations; it does not take into account any client or prospects particular investment or other financial objectives or strategies, nor any client's legal, regulatory, tax or accounting status, nor does it purport to be comprehensive or intended to replace the exercise of a client or prospects own careful independent review regarding any corresponding investment or other financial decision. The Content does not constitute investment research or legal, regulatory, investment, tax or accounting advice and is not an offer or solicitation to buy or sell securities or any other product, nor is it intended to constitute any binding contractual arrangement or commitment by State Street of any kind. The Content provided was prepared and obtained from sources believed to be reliable at the time of preparation, however it is provided "as-is" and State Street makes no guarantee, representation, or warranty of any kind including, without limitation, as to its accuracy, suitability, timeliness, merchantability, fitness for a particular purpose, non-infringement of third-party rights, or otherwise. State Street disclaims all liability, whether arising in contract, tort or otherwise, for any claims, losses, liabilities, damages (including direct, indirect, special or consequential), expenses or costs arising from or connected with the Content. The Content is not intended for retail clients or for distribution to, and may not be relied upon by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to applicable law or regulation. The Content provided may contain certain statements that could be deemed forward-looking statements; any such statements or forecasted information are not guarantees or reliable indicators for future performance and actual results or developments may differ materially from those depicted or projected. Past performance is no guarantee of future results. No permission is granted to reprint, sell, copy, distribute, or modify the Content in any form or by any means without the prior written consent of State Street.

The offer or sale of any of these products and services in your jurisdiction is subject to the receipt by State Street of such internal and external approvals as it deems necessary in its sole discretion. Please contact your sales representative for further information. State Street may from time to time, as principal or agent, for its own account or for those of its clients, have positions in and/or actively trade in financial instruments or other products identical to or economically related to those discussed in this communication. State Street may have a commercial relationship with issuers of financial instruments or other products discussed in this communication.

©2024 STATE STREET CORPORATION