



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

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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.

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