

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, and multi-asset factor models enable firms to identify, measure and model risk across the front and middle office on one platform.

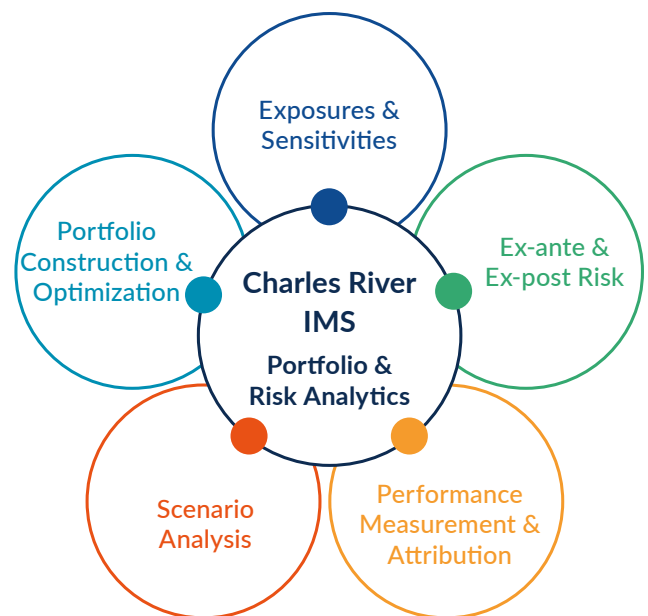


The models support both absolute and relative return strategies and cover all traded securities and illiquid assets globally. The Northfield Portfolio Optimizer enables managers to construct portfolios that deliver more return for each level of risk while incorporating manager preferences and market 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.

Clients can also access Northfield's Risk Systems That Read (RSTR). These models blend news flows, 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	Monitor and manage positions in individual global equity, fixed income, currencies, and indices.
Wealth Managers & Family Offices	Enables tax aware portfolio optimization



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Risk Modeling	Northfield Equity Models	<ul style="list-style-type: none"> • Global Equity Risk • Single Country and Regional Equity • US Fundamental and Macroeconomic Equity • US Short Term Equity • XRD Hybrid Equity Risk
	Northfield Adaptive Near Horizon Risk Models	
	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 • Private Equity Real Estate
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 batch processing 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, A STATE STREET COMPANY

Investment firms, asset owners, wealth managers, hedge funds and insurers in over 30 countries rely on the Charles River Investment Management Solution (Charles River IMS) to manage US\$28 Trillion. Together with State Street's middle and back office services, Charles River technology forms the foundation of the State Street AlphaSM platform. Charles River IMS helps firms automate and simplify their 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 third-party provider ecosystem enables clients to seamlessly access the data and analytics, applications and liquidity venues that support the unique 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 January 2020)

ABOUT STATE STREET CORPORATION

State Street Corporation (NYSE: STT) is the world's leading provider of financial services to institutional investors including investment servicing, investment management and investment research and trading. With \$34.36 trillion in assets under custody and administration and \$3.12 trillion* in assets under management as of December 31, 2019, State Street operates globally in more than 100 geographic markets and employs approximately 39,000 worldwide. For more information, visit State Street's website at www.statestreet.com.

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*Assets under management as of December 31, 2019 includes approximately \$45 billion of assets with respect to which State Street Global Advisors Funds Distributors, LLC (SSGA FD) serves as marketing agent; SSGA FD and State Street Global Advisors® are affiliated.

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