



MSCI Portfolio and Risk Analytics in Charles River IMS

Investment managers, asset owners, insurers, and wealth managers can now access [MSCI Portfolio and Risk Analytics](#) from the Charles River Investment Management Solution ([Charles River IMS](#)). Charles River's portfolio management, risk and attribution capabilities enhanced with MSCI's granular and factor ex-ante and ex-post risk and performance analytics provides portfolio and risk managers the ability to measure risk and performance, identify the sources of risk and return, and manage risk through seamlessly integrated what if analytics & optimization capabilities to bring differentiated investment products to market faster.

Leveraging Charles River's single data model and manager workbench, MSCI provides investment and risk professionals with a common language for identifying and communicating the sources of market, credit, liquidity, and counterparty risk across asset classes, including ESG and private assets.



Investment Professional Benefits

- Single desktop user experience
- Robust portfolio construction and optimization capabilities tightly coupled with compliance
- Quickly see risk impact based on proposed and executed trades
- Seamless access to factor models and MSCI analytics across risk and attribution workflows



Firm-wide Benefits

- Unlock operational efficiencies by leveraging a common data infrastructure across front, middle and back office
- Allow for a consistent view of risk and performance analytics across the enterprise
- Manage all funds, strategies and accounts on a single enterprise platform
- Facilitate collaboration across staff roles and business units

Charles River IMS clients gain access to MSCI's Barra equity, fixed income, and multi-asset class factor models as well as Barra Performance Attribution (factor-based, Fixed Income), and the RiskMetrics suite of granular analytics and stress testing.



Over 300 MSCI Barra Equity Models* help fund managers construct, manage and analyze equity portfolios across developed, emerging and frontier markets through multiple investment time horizons. With MSCI's extensively researched and intuitive fundamental factors, fund managers can identify sources of global equity returns that are common across a broad set of securities and estimate their associated risks.



MSCI Fixed Income Models

Barra Fixed Income Factor Models provide coverage across all asset classes and different levels of granularity, designed for portfolio construction, hedging and rebalancing delivered as a robust model to support same-language conversations

Risk Analytics powered by sharpened Single Security Analytics and high quality data

Extensive Stress Test library including predefined historical events and forward looking macro-events, offers flexibility in defining hypothetical events

Performance Attribution model to tailor the return decomposition interactively to match the investment strategy covering top-down and bottom-up approaches



MSCI Multi-Asset Class (MAC) Factor Models help firms construct and manage asset-class and factor-based allocation strategies by providing insights into key exposures across all asset classes. The MAC models' tiered structure enforces consistency across the investment process and helps simplify communication of exposures by providing:

Detailed exposures for portfolio managers

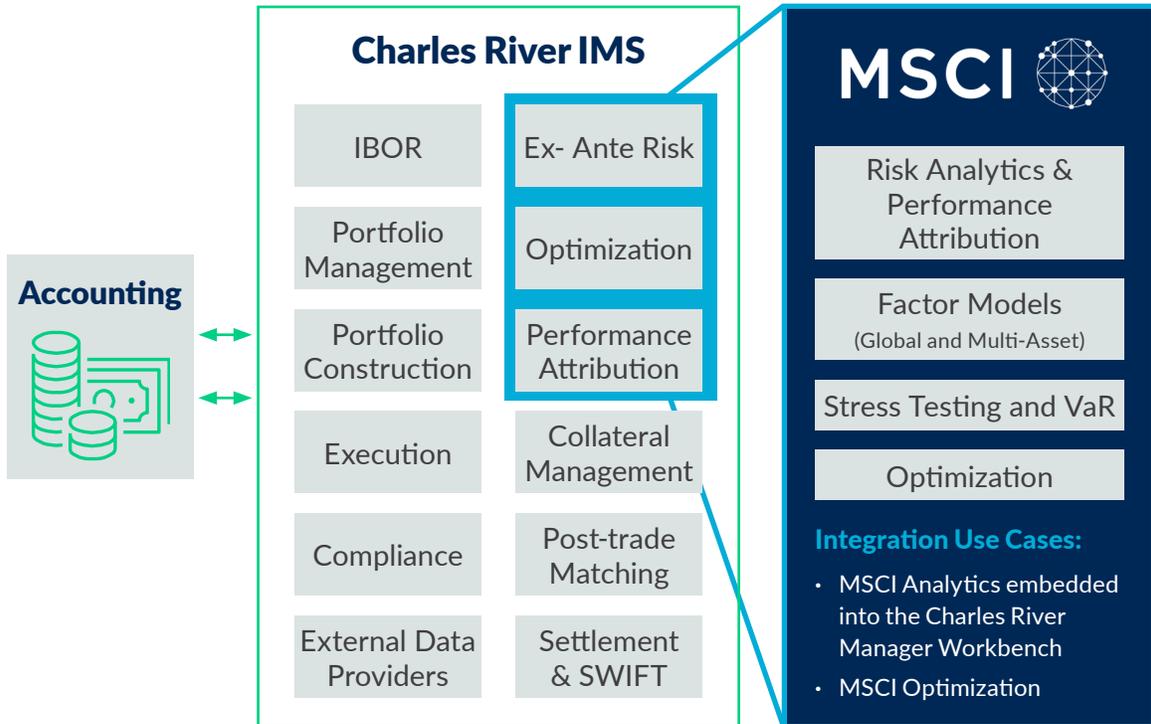
Core exposures for asset class managers

Global exposures for asset allocators



MSCI Barra Attribution and Performance Analytics extends Charles River PMAR with industry proven capabilities. Clients can analyze their entire hierarchy of portfolios to understand sources of return and risk side-by-side. MSCI also enables flexible and granular return decomposition aligned with a portfolio manager's investment strategy and required granularity.

MSCI's Portfolio and Risk Analytics in Charles River IMS



MSCI Barra Risk Models

- 300+ Models Across Multiple Time Horizons*
- Global and Local Equity Models
- Fixed Income
- Private Equity, Real Estate, Hedge Funds
- Multi-Asset Class



Attribution

- Brinson and Factor
- Equity, Fixed Income, Multi-Asset Class



RiskMetrics

- Liquidity Risk Management and Regulatory Reporting
- Exposures and Sensitivities
- Distributional Statistics (VaR, Volatility, Tracking Error)
- Stress Tests
- Granular Basis Risk
- Single Security Analytics with Multiple Levels of Aggregation to Portfolios/ Funds, Attributes like Industry and Sector, and Custom Attributes like Trader and Business Units

MSCI

MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process. To learn more, please visit www.msci.com.

Charles River Development, A State Street Company

Investment, wealth and alternative managers, asset owners and insurers in 30 countries rely on Charles River IMS to manage USD \$36 Trillion in assets. Together with State Street's middle and back office services, Charles River's cloud-deployed front [and middle] office technology forms the foundation of State Street AlphaSM. 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. We serve clients globally with more than 1,000 employees in 11 regional offices. Learn more at www.crd.com

(Statistics as of Q4 2021)

State Street Corporation

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** Assets under management as of December 31, 2021 includes approximately \$61 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 Advisors are affiliated.*

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