

MSCI Municipal Bond Models

- ▶ Power your front and middle office with state-of-the-art risk and return analytics for a vast market comprising \$4Trillion of outstanding notional and more than a million securities

Municipal bonds are often a large, integral segment of U.S. fixed income portfolios. However, quantitative modeling of munis are just as often a patchwork of rules-of-thumb and shortcuts from other fixed income asset classes. MSCI's suite of muni bond products enables modern asset allocation practices while incorporating idiosyncratic features of the muni bond market, such as conduit obligor structures and use-of-proceeds sector classifications. MSCI muni models allow users across investment firms, from portfolio managers to risk control, to gain a new level of quantitative insight into the market and their portfolios. Power your front and middle office with state-of-the-art risk and return analytics for a vast market comprising \$4Trillion of outstanding notional and more than a million securities.

Gain deeper portfolio insight

Identify key drivers of performance across muni bond segments using the following enhancements.

- An innovative new pricing model for callable municipal bonds
- More precise risk measurement and forecasting with new issuer and sector yield curve datasets
- Robust portfolio construction tools based on our municipal factor model

Manage risk more effectively

Create greater alignment between risk and portfolio management teams with high-quality risk measures that are consistent with front office expectations.

- Gain transparency into systematic and idiosyncratic risks by understanding issuer-level mis-pricing as well as factor risk
- MSCI's price-based implied volatilities estimated directly from callable municipal bonds reveals a new dimension of hedging and risk

Broad analytical and instrument coverage

Risk Statistics

- Yield, Option-adjusted Spread, Idiosyncratic Spread
- Key Rate Durations, OAS Spread Duration, Volatility Duration, Vega
- Total Risk, Common Factor Risk, Specific Risk

Scenario Analysis

- Interest Rates Instantaneous Shocks
- Spread Shock Scenarios
- Horizon Analysis (Future Interest Rates Shocks)
- Correlated and Uncorrelated Factor Shock Scenarios

Instrument and Segment Coverage

- Tax-exempt General Obligation (GO) Bonds
- Tax-exempt Revenue (REV) Bonds
- Taxable Muni Bonds
- Tender Option Bonds
- Risk-free, sector, issuer and obligor yield curves, and implied volatility series datasets



Integrated into MSCI's multi-asset class analytics

In today's environment, investment managers need consistent analytics across the front and middle office as well as across asset classes. MSCI's muni bond analytics are integrated into our unified, industry-leading analytics framework, delivering a holistic view of risk across fixed income, commodities, equities and FX.

MSCI Fixed Income Analytics

MSCI's muni bond analytics are part of our extensive suite of fixed income portfolio analytics. Backed by expert research and rigorously reviewed data, our solutions help clients address four critical areas of fixed income portfolio risk and performance analytics.

Easily access and integrate fixed income content

Integrate MSCI content into your workflows without disrupting your existing investment processes.



Interactive applications

MSCI applications, including BarraOne, Single Security Analyzer and Excel plug-in, enable portfolio managers to receive fixed income analytics directly in the Order Management System (OMS).

Examples of strategic partnerships:



IHS Markit



Large-scale batch reporting

MSCI managed production of standardized and custom reports in PDF, Excel, CSV, XML and other formats for thousands of portfolios.



APIs

Direct, intraday access to MSCI's data and calculation engines via modern API's that maximize speed of delivery.

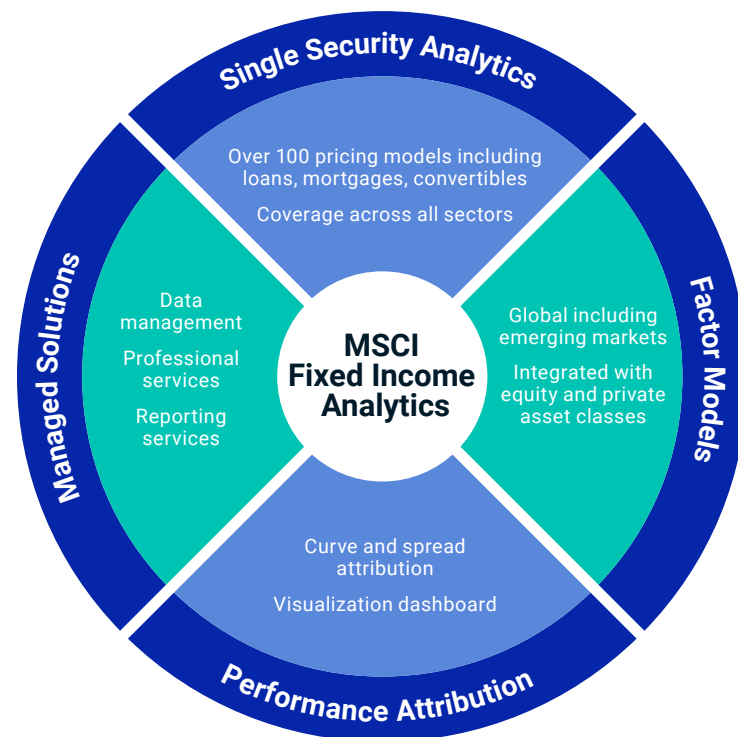
We offer

Multiple Value-at-Risk (VaR) simulation methodologies

Robust stress testing

Sensitivity analysis

Flexible instrument pricing models



Contact us for more information msci.com/contact-us

About 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.

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