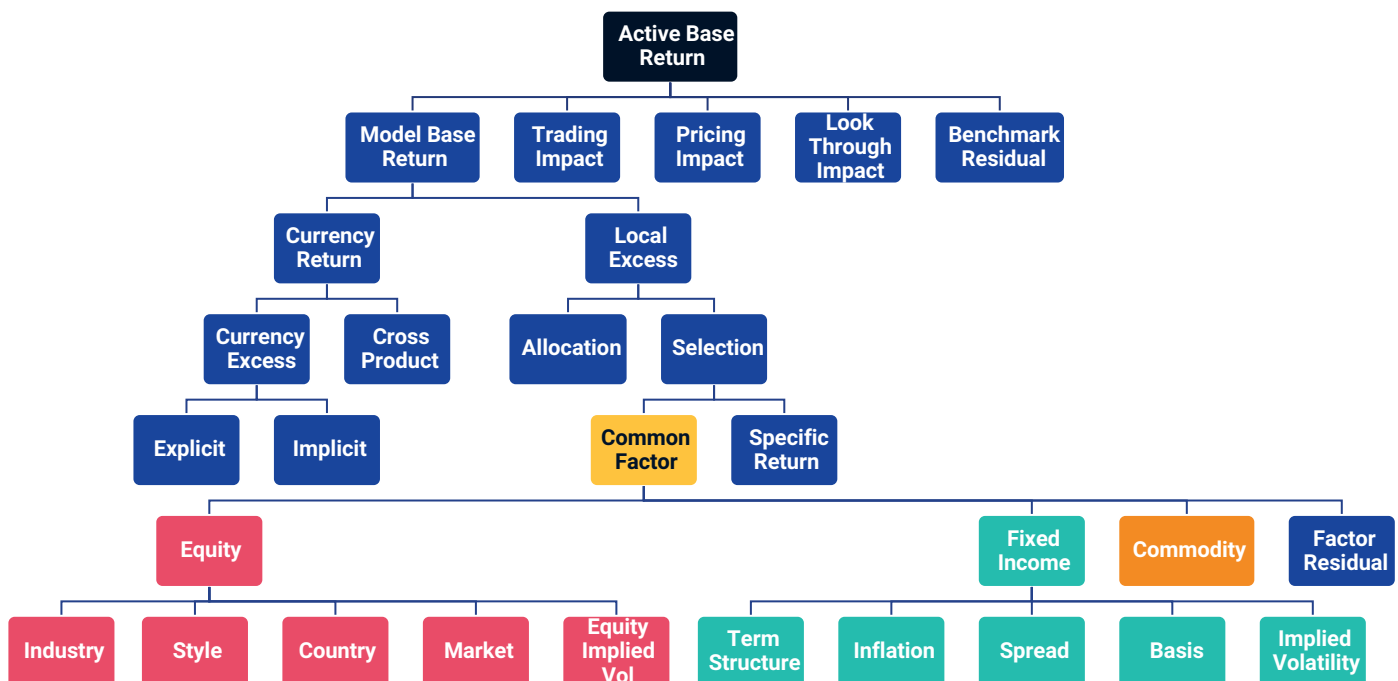


MSCI Multi-Asset Class Performance Attribution Model

The MSCI Multi-Asset Class (MAC) Performance Attribution Model in BarraOne allows clients to analyze the performance of equity, fixed income, commodity and multi-asset class portfolios in alignment with their risk reporting. This is carried out by attributing performance to factor return contributions due to exposure to liquid asset-class risk factors from MSCI's MAC Factor models.

MAC Factor Performance Attribution Model

Supporting equity, commodity and fixed income factors

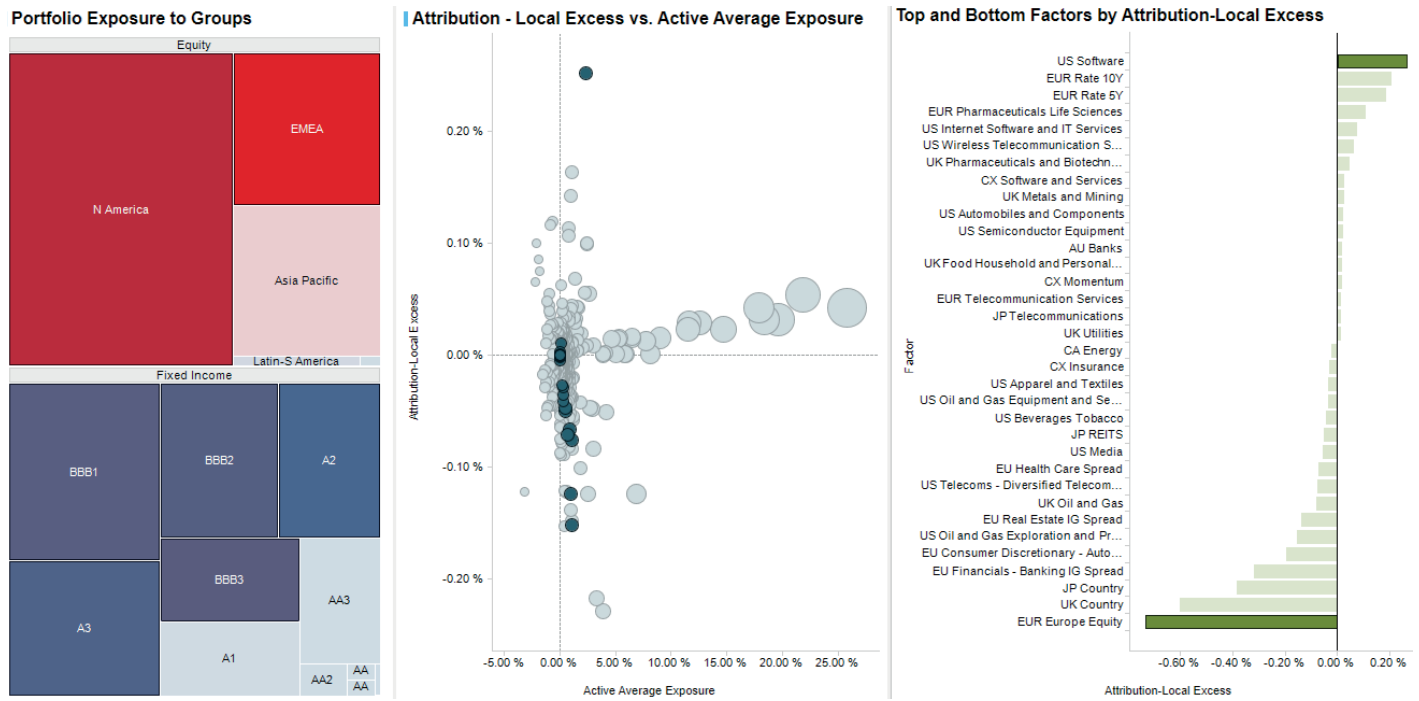


Benefits

- **Factor risk and return alignment:** Understand multi-asset class factor return contributions in a flexible reporting structure aligned with BarraOne's risk decomposition and factor risk exposure breakdown reports.
- **Local, global, and tier risk models:** Choose from multiple local, global, and tier risk models to tailor the granularity of return drivers captured for single manager analysis, multi-manager, asset allocation, and board-level reporting.
- **Flexible grouping to match the investment process:** Both index vendor and user-supplied attributes can be used for grouping in alignment with your investment process.
- **Granular time-series analysis:** Drilldown through asset classes and groups to understand factor-based performance for the full reporting period as well as month-by-month.
- **Integrated fund model:** Factor return decomposition for funds covered by BarraOne's Fund Model, for funds with or without transparency into holdings.

Factor level drilldown for equity, fixed income and commodity factors

Isolate factors return contributions by type, asset class or user specified grouping



Features

- **Visualization:** A visualization dashboard that provides insight on otherwise complex performance results.
- **Reconciled vendor benchmarks:** A large universe of over 20,000 equity, fixed income and commodity benchmarks for use in risk and performance analytics are reconciled daily and can be permissioned for licensed clients.
- **Instrument coverage:** BarraOne supports equities, fixed income, commodities, ETFs, derivatives and mutual funds across markets globally.
- **Asset return calculator:** Returns for fixed income and derivative assets are calculated by BarraOne for attribution reporting using client imported prices.
- **History:** Run 5-year performance attribution reports over a user-defined time period.

About BarraOne® performance analytics

A multi-asset class, multi-currency risk and performance analytics platform that enables investors to use its risk forecasting model, correlated stress test engine and performance analytics together in an integrated fashion.

BarraOne Performance Analytics offers a suite of performance attribution models to analyze sources of portfolio performance that help power better investment decisions.

Allocation-selection attribution: Brinson-Fachler and currency attribution for top-down sector allocation strategies for equity or multi-asset class portfolios.

Asset selection attribution: Evaluate bottom-up stock-picking investment strategies for equity or multi-asset class portfolios using asset selection and currency attribution.

Fixed income attribution 2.0: Analyze sources of fixed income returns including income, paydown, rolldown, term structure, inflation, spread, and currency returns, and attribute return to spread market exposure, spread allocation and issue selection decisions using DTS or OASD approaches.

MAC factor-based attribution: Analyze the performance of equity, fixed income, and multi-asset class portfolios in alignment with risk reporting. This is carried out by attributing performance to factor return contributions due to exposure to liquid asset-class risk factors from MSCI's MAC Factor models.

Multi-portfolio attribution: Attribute the performance of entire hierarchical investment structures simultaneously across all asset classes, strategies and managers.

About MSCI

MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 45 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.

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