

BARRA[®] AEGIS SUITE

MANAGE YOUR PORTFOLIOS MORE EFFICIENTLY

BARRA[®] AEGIS IS AN INTEGRATED SUITE OF EQUITY INVESTMENT ANALYTICS AND PORTFOLIO MANAGEMENT TOOLS DESIGNED TO HELP USERS ACTIVELY MANAGE EQUITY RISK AGAINST EXPECTED RETURNS.

Identify

Isolate country, currency, industry, style, market or specific risk sources to see which policies are the largest contributors to your portfolio's risk.

Analyze and Evaluate

Evaluate performance in detail by attributing returns to their fundamental and asset-specific components, whether in absolute terms or relative to a benchmark. Analyze long- and short-side returns separately for a long-short portfolio while gaining insight that will improve future performance.

Test

Test your investment strategies through portfolio simulation by analyzing return contributions, risk, information ratio and t-statistic. Evaluate strategies by viewing the performance of the portfolio and its factor bets long time horizons.

Report

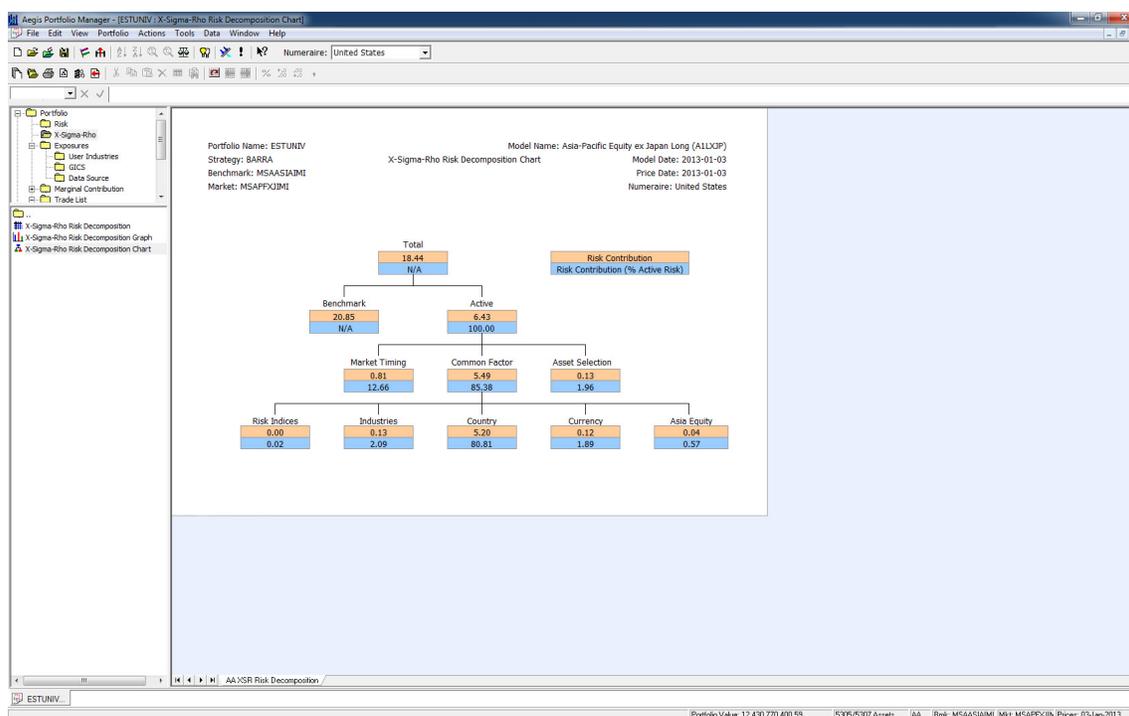
Streamline internal and external communication with automated reporting and industry-standard language and measures. Generate reports daily, weekly, monthly, quarterly, semiannually or annually over a time span to run on any particular day.

KEY BENEFITS

- **Choose Allocation Features:** Use the flexibility of the attribution tree to choose between a direct allocation to the model's factors, or a hybrid model with a region allocation or sector allocation layer.
- **Determine Skill or Luck:** Use the holdings from every month to evaluate the portfolio's investment tilts in determining whether a particular investment policy's return is skill or luck.
- **Enhance Performance:** Strengthen the trade-offs between risk and return by incorporating the interactions among transaction costs, timing, asset constraints, tax implications and other considerations to produce the best results.
- **Reduce Unintentional Bets:** Combine the exposure and volatility of each source of risk to uncover unintentional bets.
- **Access a Variety of Third Party Index Data:** Benchmark your risk and performance analytics against MSCI or other third party index vendor data.

INTEGRATION, AUTOMATION AND TECHNOLOGY

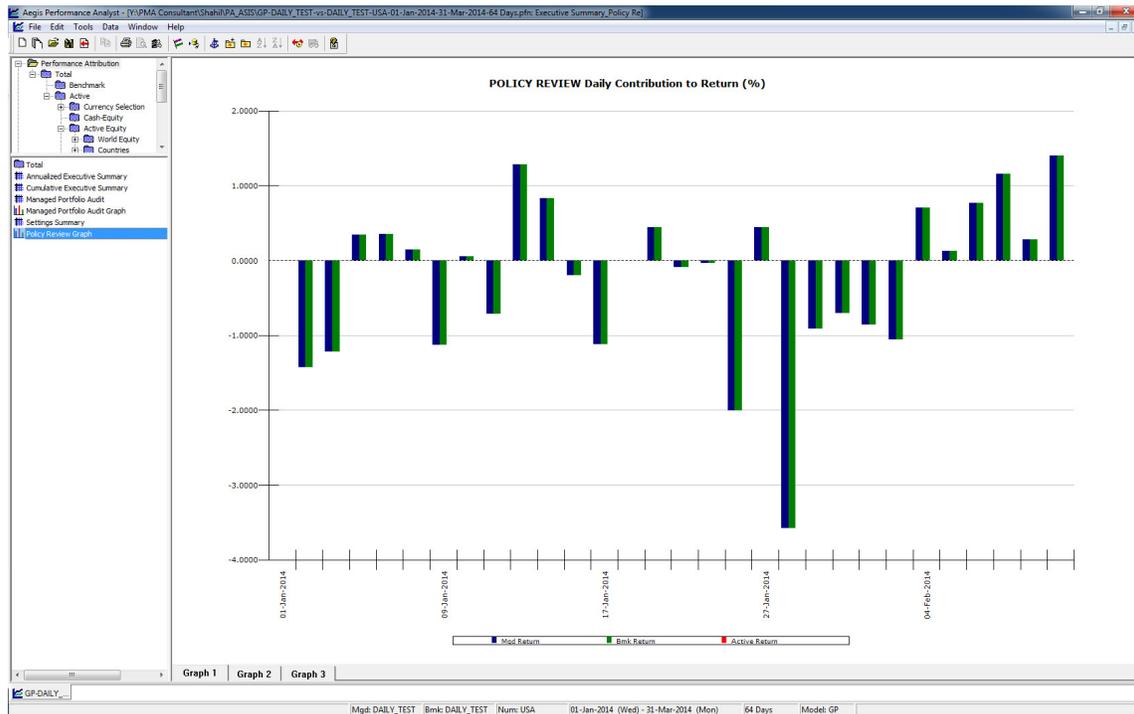
- **Directly Link with Accounting Systems:** Update portfolio positions directly from your accounting system, so your performance reflects the changes more accurately.
- **Identify Trends and Performance Results:** Review performance based on daily returns to identify trends and respond quickly.
- **Review up-to-date information:** Produce daily, weekly and monthly reports to satisfy the requirements of internal or external clients.
- **Analytic Libraries** can be accessed directly through an API.
- **Local Installation** that keeps holdings and other proprietary information on client servers.



BARRA® OPTIMIZER

An optimization software library designed to fit seamlessly into portfolio management workflows and support improved investment decision making processes.

- **Efficient Frontier Optimization:** Execute efficient frontier optimizations to construct numerous portfolios that maximize risk-return or utility-turnover trade-offs.
- **Mean-Variance Optimization:** Construct or rebalance your portfolio to achieve an array of results: optimal diversification, tilts on Barra or user-defined factors, indexing or maximized risk-return trade-off. Penalize Residual Alpha in optimization, so alpha and risk factors can be better aligned according to your parameters.
- **Tax-Efficient Optimization:** Consider not only the return and risk aspects of each portfolio, but also the tax circumstances of the investor and the tax-lot by tax-lot cost considerations of the existing portfolio.



PERFORMANCE ANALYST

Uncover the main contributors to your risk-adjusted performance and improve your portfolio management decisions.

- **Isolate Sources of Return:** Locate the drivers of return in your portfolio to gain insights that will improve future performance.
- **Evaluate Style Profile:** Consider a fund's style and judge its consistency over different economic periods, as well as identify style drifts.
- **Validate your Performance:** Calculate your risk-adjusted performance or verify the analysis carried out by your clients.
- **Match the Analysis to your Needs:** Match the frequency of the analysis to your needs or the situation. Perform all analyses using a daily buy-and-hold or monthly buy-and-hold approach.

AUTOMATION ASSISTANT

Streamline your internal and external reporting by automating all Barra Aegis risk and performance reports.

- **Strategy Backtesting** is a standardized and automated process that verifies the reliability and quality of your investment strategies against historical data.
- **Automated Recurring Tasks**, with an easy-to-use interface, save time and reduce errors. periods, as well as identify style drifts.
- **Easy Batching, with no Programming Required**, simplifies the day-to-day workload as batch optimization cases and reports are allocated to specific directories.
- **Scheduler:** generates routine reports and optimizations daily, weekly, monthly, quarterly, semi-annually or annually over a particular time span to run on any particular day.

DEVELOPER'S TOOLKIT

Helping you ensure the quality and success of your new portfolio ideas

- **Barra Aegis Analytics Libraries** can be accessed directly, or you can manipulate their use, presentation and surrounding.
- **Your Own Custom Application Interface** can satisfy your firm's specific needs and requirements and provide local offices with customizable functionality.
- **Web-Based Reporting** automatically generates and distributes web-based reports across your company intranet.
- **System Integration** links your back-office accounting system or third-party data source to Barra's portfolio analytics and automatically exports the results into a customized report writer that can deliver tailored results to you and your clients.
- **Ease-of-use and Enhanced Productivity** lead to faster verification and implementation, resulting in a significant reduction in time spent on these tasks.



POWERED BY *BARRA* MULTI-FACTOR MODELS, THE AEGIS SUITE HELPS PORTFOLIO MANAGERS DECOMPOSE RISK AND ACTIVELY MANAGE PERFORMANCE.

ABOUT MSCI

For more than 40 years, MSCI's research-based indexes and analytics have helped the world's leading investors build and manage better portfolios. Clients rely on our offerings for deeper insights into the drivers of performance and risk in their portfolios, broad asset class coverage and innovative research. Our line of products and services includes indexes, analytical models, data, real estate benchmarks and ESG research. MSCI serves 98 of the top 100 largest money managers, according to the most recent P&I ranking. For more information, visit us at www.msci.com.

The information contained herein (the "Information") may not be reproduced or disseminated in whole or in part without prior written permission from MSCI. The Information may not be used to verify or correct other data, to create indexes, risk models, or analytics, or in connection with issuing, offering, sponsoring, managing or marketing any securities, portfolios, financial products or other investment vehicles. Historical data and analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. None of the Information or MSCI index or other product or service constitutes an offer to buy or sell, or a promotion or recommendation of, any security, financial instrument or product or trading strategy. Further, none of the Information or any MSCI index is intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such. The Information is provided "as is" and the user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF MSCI INC. OR ANY OF ITS SUBSIDIARIES OR ITS OR THEIR DIRECT OR INDIRECT SUPPLIERS OR ANY THIRD PARTY INVOLVED IN THE MAKING OR COMPILING OF THE INFORMATION (EACH, AN "MSCI PARTY") MAKES ANY WARRANTIES OR REPRESENTATIONS AND, TO THE MAXIMUM EXTENT PERMITTED BY LAW, EACH MSCI PARTY HEREBY EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITING ANY OF THE FOREGOING AND TO THE MAXIMUM EXTENT PERMITTED BY LAW, IN NO EVENT SHALL ANY OF THE MSCI PARTIES HAVE ANY LIABILITY REGARDING ANY OF THE INFORMATION FOR ANY DIRECT, INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR ANY OTHER DAMAGES EVEN IF NOTIFIED OF THE POSSIBILITY OF SUCH DAMAGES. The foregoing shall not exclude or limit any liability that may not be applicable law be excluded or limited.

©2015 MSCI Inc. All rights reserved | CFS0515