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An MSCI Brand

Barra US Equity Model (USE4)

Developed in consultation with our clients, the **Barra US Equity Model (USE4)** is the first in a family of models to include the latest advances in risk methodology, providing institutional investors the ability to align factor structure with their investment processes.

Key Features

- **Optimization Bias Adjustment** adjusts the covariance matrix and improves risk forecasts for optimized portfolios. Forecasting bias is reduced within the factor covariance matrix by scaling up where risk is under-forecast and scaling down where risk is over-forecast.
- **Volatility Regime Adjustment** calibrates factor volatilities to current market levels, resulting in faster response to market trends. It reduces the under-prediction of risk when entering a regime of increased volatility and the over-prediction of risk when exiting a period of elevated volatility.
- **Multi-industry scheme re-built** for consistency with GICS®, the global industry classification standard developed by MSCI and Standard & Poor's. This allows classification of the multi-industry business activities of firms within the framework of GICS®, as well as consistency with the firm-level GICS® classification.
- **Significantly expanded coverage universe** for USE4 across pink sheets, OTC securities and cross lists including a 70% increase in traditionally covered US-traded equities. Also included is the introduction of almost 4,500 foreign-listed shares of US companies.
- **Enhanced style factors** use high-quality data and the latest research methodology. New factors include Non-linear Beta and Country factors.
- **Separation of market effect from industries** resulting in increased forecast accuracy and greater explanatory power with regards to the industry factor returns, ex-market.
- **Daily model updates** are designed to improve risk monitoring, exposure control, intra-month portfolio rebalancing, scenario/stress testing and backtesting. Technical exposures, fundamental factors (with re-standardization), industry membership/multi-industry model are now updated daily.
- **Deep daily model history** back to July 1995.
- **60 Industry factors** based on GICS®.
- **12 style factors** to model risk sources not captured by the market or industry factors.
- **Introducing a new class of model at the Daily Forecast horizon** where the Volatility Regime Adjustment plays a key role in adjusting the model forecasts to daily market movements. **Also available in Short- and Long-horizon versions.**
- **Available in Barra Portfolio Manager, Barra Aegis, and Barra Models Direct.**

Key Benefits

Improved Risk and Performance Analysis

USE4 provides portfolio managers with a better understanding of sources of risk and return, and the ability to analyze how their factor tilts affect portfolio risk and performance.

Insight into the Investment Process

Chief Investment Officers, portfolio managers, researchers, and risk managers working with US portfolios can now benefit from enhanced style factors that provide detailed forecasts for long-only and long-short portfolios.

Enriched Risk Forecasts for Optimized Portfolios

USE4 enhances the accuracy of risk forecasts for optimized portfolios while maintaining forecast accuracy for non-optimized cases. By using USE4 in their investment process, quantitative portfolio managers and researchers who use a risk model and an optimizer in portfolio construction will gain additional benefits such as the un-biased risk forecast for optimized portfolios.

Style Factor Overview

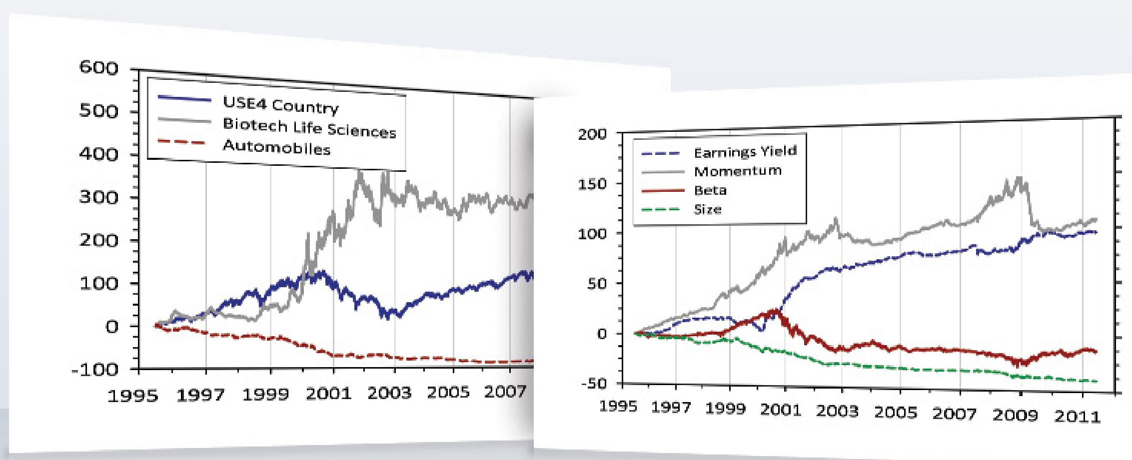
- » Beta and Non-Linear Beta are style factors that describe the components of risk driven by market sensitivity.
- » Liquidity describes return patterns to stocks based upon their relative trading activity.
- » Residual Volatility explains returns associated with high-volatility stocks that are not captured by the Beta factor.
- » Momentum explains the return differences of stocks based on their recent relative performance.
- » Size and Non-linear Size styles capture systematic risk differences between large cap and small cap assets.
- » Book-to-Price, Growth, Leverage, Dividend Yield, and Earnings Yield styles capture the risk premia associated with your firm's business model.

Cumulative Return Performance of the USE4 Country Factor and Two Industry Factors from June 30, 1995 to May 31, 2011

Performance cycles in the Country factor associated with the Technology Bubble (late 1990s) and the Financial Crisis (2007-2009) can be observed. The Biotech Life Sciences factor had strong cumulative returns during both periods, albeit with some extended periods of flat performance. On the other hand, the Automobile factor had consistent poor performance during the sample periods.

Cumulative Returns for Several USE4 Style Factors from June 30, 1995 to May 31, 2011

The best performing factors were Momentum and Earnings Yield, although Momentum achieved that performance at significantly higher volatility. Beta had improved performance leading into the period of the Technology Bubble at the end of the 1990s, but had relatively poor performance afterwards. The downward trend in Size indicates that small cap stocks consistently outperformed large cap stocks throughout the sample period.



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About MSCI

MSCI Inc. is a leading provider of investment decision support tools to investors globally, including asset managers, banks, hedge funds and pension funds. MSCI products and services include indices, portfolio risk and performance analytics, and governance tools. The company's flagship product offerings are: the MSCI indices with approximately USD 7.5 trillion estimated to be benchmarked to them on a worldwide basis[1]; Barra multi-asset class factor models, portfolio risk and performance analytics; RiskMetrics multi-asset class market and credit risk analytics; IPD real estate information, indices and analytics; MSCI ESG (environmental, social and governance) Research screening, analysis and ratings; ISS corporate governance research, data and outsourced proxy voting and reporting services; and FEA valuation models and risk management software for the energy and commodities markets. MSCI is headquartered in New York, with research and commercial offices around the world.

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[1] As of March 31, 2013, as reported on July 31, 2013 by eVestment, Lipper and Bloomberg.

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