

Barra Australia Equity Model (AUE4)

The **Barra Australia Equity Model (AUE4)** is a responsive model that can adjust rapidly to market trends and shocks while providing portfolio managers a more intuitive understanding of what is driving risk and return in the Australian equity market.

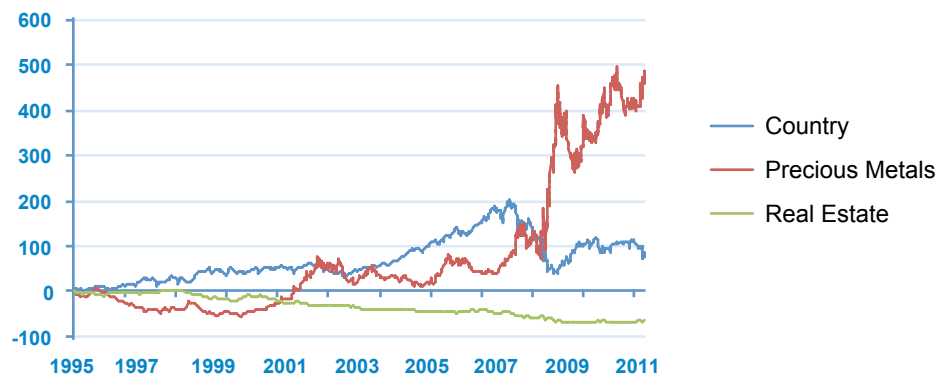
Key Features

- » **Volatility Regime Adjustment** allows clients to calibrate factor volatilities to current levels, resulting in faster response to market trends. This methodology can reduce the under-prediction of risk when entering a period of increased volatility and the over-prediction of risk when exiting a period of reduced volatility.
- » **Over 3,600 assets** covered, including Depository Receipts (DRs) and global cross-lists of Australian companies.
- » **Enhanced style factors, such as a new Residual Volatility factor**, use high-quality data and the latest research methodology.
- » **Separation of market effect from industries** results in increased forecast accuracy and more responsive correlations.
- » **Daily exposure 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), and industry memberships are updated daily.
- » **Deep daily model history** back to July 1995.
- » **Optimization Bias Adjustment improves risk forecasts for optimized portfolios.** Clients can reduce forecasting bias within the factor covariance matrix by scaling up where risk is under-forecast and scaling down where risk is over-forecast.
- » **Fifteen industry factors** based on GICS® including increased granularity within the financial sector.
- » **Seven style factors** to model risk sources not captured by the market or industry factors.
- » **Available in Short- and Long-horizon versions.**
- » **Available in Barra Portfolio Manager, Barra Aegis, and Barra Models Direct.**

Key Benefits

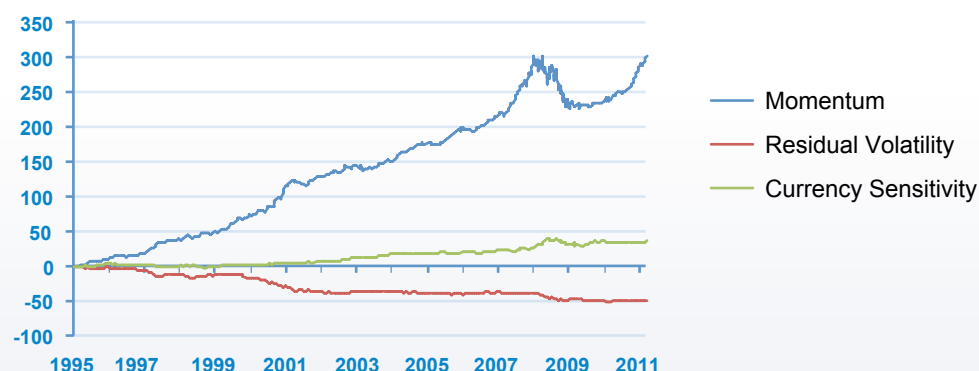
- » **More Responsive Model Forecasts.** Incorporating the new Volatility Regime Adjustment methodology, the Barra Australia Equity Model is able to respond more rapidly to market trends and shocks while controlling sample noise. This methodology is a key innovation in the factor covariance matrix as well as an important component of the redesigned specific risk model, which offers a significant advancement in forecast accuracy.
- » **Improved Risk and Performance Analysis.** The model provides portfolio managers with a better understanding of their sources of risk and return, and the ability to analyze how their factor tilts affect their portfolio risk and performance.
- » **Insight into the Investment Process.** Chief Investment Officers, portfolio managers, researchers, and risk managers working with Australian portfolios can now benefit from enhanced style factors that provide detailed forecasts for long-only or long-short portfolios. New factors include non-linear size and residual volatility factor.

Cumulative return performance of the AUE4 Country factor, Precious Metals industry, and Real Estate industry for the period of June 30, 1995 to August 31, 2011



Shocks to the Country factor and the Precious Metals industry during the global financial crisis (2007 to 2009) can be observed. The Real Estate factor had negative cumulative returns over the entire historical period. On the other hand, the Precious Metals factor moved upward explosively at the end of 2008 while the Country factor experienced an extended drawdown.

Cumulative returns for the AUE4 Momentum, Residual Volatility, and Currency Sensitivity style factors from June 30, 1995 to August 31, 2011



The best-performing factor was Momentum, although Momentum exhibited a sizeable reversal in 2009. Currency Sensitivity produced a steady, positive cumulative return while Residual Volatility produced a negative cumulative return.

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About MSCI

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The company's flagship product offerings are: the MSCI indexes with approximately USD 7.5 trillion estimated to be benchmarked to them on a worldwide basis¹; Barra multi-asset class factor models, portfolio risk and performance analytics; RiskMetrics multi-asset class market and credit risk analytics; IPD real estate information, indexes 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.