Barra Europe Equity Model (EUE3)

The Barra EUE3 multi-factor model can be used by fund managers in the portfolio construction, risk management, and performance analysis of European equity portfolios. Six model versions provide different levels of detail in terms of the factor structure, and two forecasting horizons – short-term and long-term. This enables portfolio managers to choose the model version that best matches their investment processes.

Key Features & Benefits

- Broad coverage: includes 13 new countries, 29 countries in total
- More than 9,000 assets covered as of January 2009
- Intuitive factor structure: industries and countries modelled as offsets to a regional market factor
- 29 industry factors based on the Global Industry Classification Standard (GICS®)
- 9 styles including liquidity and earnings yield
- Short-and Long-term (S and L) horizons strike a balance between accuracy and forecast variability
- More accurate risk forecasts and increased explanatory power compared to the predecessor model, EUE2
- Innovative methodologies include robust regression, outlier truncation in the covariance calculation, and an enhanced specific risk model
- Deep model history going back to 1995 facilitates back-testing of investment strategies
- Base, UK-derived, and Eastern Europe derived models offer choice in level of factor detail
- Daily risk forecast updates available from July 2008

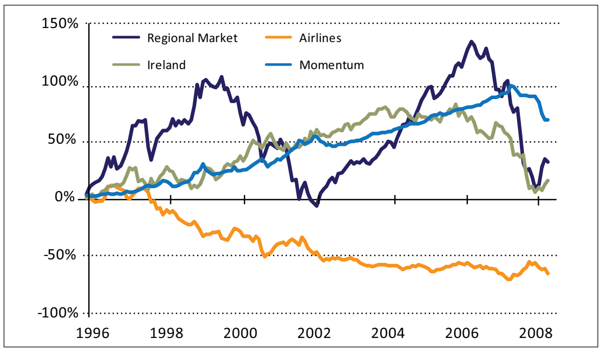
Coverage Scope of EUE3

'Non-core' countries (Eastern European countries and Iceland) are not used to estimate the regional market, industry, and style factor returns.

Factors as Drivers of Return and Risk

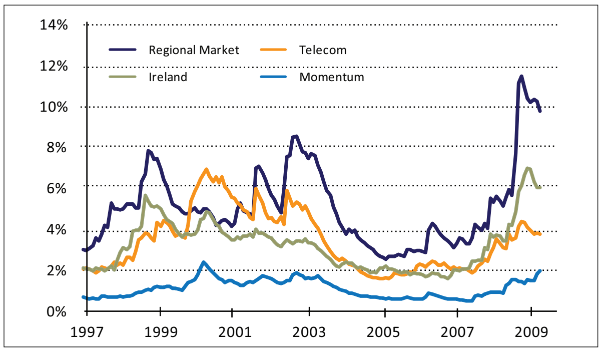
EUE3 decomposes equity portfolio risk into a currency part, a local factor part, and an asset-specific part. Industry, country, and style factors are modelled as offsets to a regional market factor. Their returns represent the performance differential to a broad, cap-weighted European market index. Regional industry and style factors facilitate the comparison of European assets with similar characteristics. Nine style factors help users explore systematic drivers of return and risk beyond the country and industry factors. Factor returns are estimated by robust cross-sectional regressions of daily asset returns. An adaptive algorithm limits the influence of outlier returns in the covariance calculations. Currency and local factors are modelled identically; EUE3 uses exponential weighting, split half-lives, and corrects for serial correlation in the factor returns. The charts below show representative examples of EUE3 factor returns and factor volatility forecasts. They demonstrate the significant level of detail captured by the model.

Cumulative Factor Return



EUE3 cumulative factor returns. Note the temporary outperformance of the Ireland factor, the underperforming Airline factor, and the trending of the momentum factor.

Monthly Factor Volatility



EUE3S factor volatilities. Regional market factor shows crashes and different market regimes. Note comparable average volatility of the Ireland and Telecom factors.

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More Accurate Specific Risk

EUE3 implements a new specific risk model which combines time series and cross-sectional components. In most cases, the model uses a history of daily specific returns of each asset, thus creating idiosyncratic forecasts. A structural component is used for assets with insufficient or ill-conditioned time series. The S and L model variants of EUE3 offer different levels of responsiveness, not only in the common factor part but equally in the specific risk forecasts.

Performance and Risk Analysis

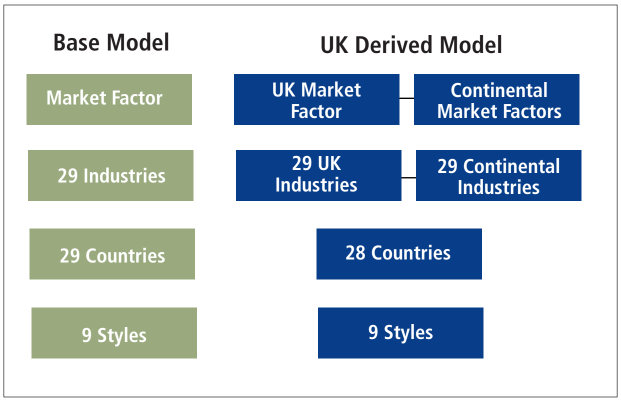
Managers of European equity portfolios can use EUE3 to gain more detailed insight into the expected sources that drive risk and diversification. They can use EUE3 for balancing investment ideas and in budgeting their risk exposures.

By attributing past performance to the same factors, EUE3 helps portfolio managers understand how their factor bets and the asset-specific returns have contributed to the overall portfolio performance. A high level of detail in the factor structure and a precise specific risk model make EUE3 well positioned to be used by portfolio managers in their analysis of market-neutral portfolios as well as for traditional long-only portfolios

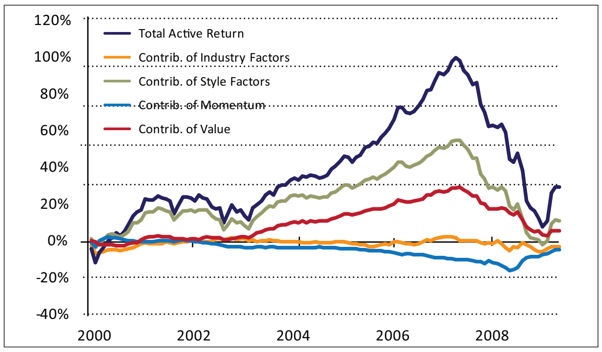
Multiple Model Versions

EUE3 is available in a base version with a single regional market factor, and in two derived versions which provide additional information in the factor structure by splitting the regional market and industry factors. The figure illustrates the factor structure of EUE3UK, the derived model with enhanced factor detail for the UK market.

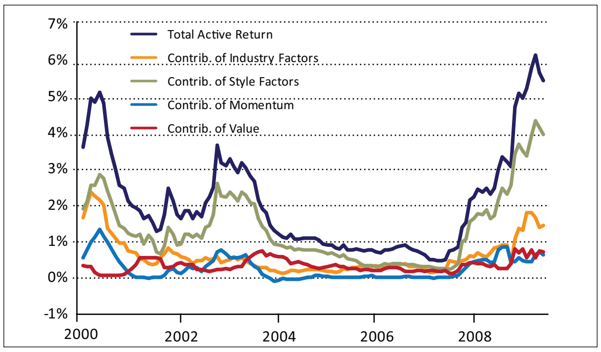
A derived model with separate Eastern European market and industry factors (EUE3EE) is also available. Derived models cater to portfolio managers who wish to carve out and separately analyze industry effects over a smaller subset of European assets.



Cumulative Active Return



Monthly Active Risk



Selected contributors to active return and risk of a European value style portfolio, measured relative to a style-neutral regional benchmark. The portfolio was constructed using the EUE3 value style factor. Note considerable outperformance until mid-2007 (left panel) which is driven by the style tilt towards value. Active risk forecasts (right panel) use the EUE3S model. Note industry factors contributing to risk but not to cumulative return.

About MSCI Barra

MSCI Barra is a leading provider of investment decision support tools to investment institutions worldwide. MSCI Barra products include indices and portfolio risk and performance analytics for use in managing equity, fixed income and multi-asset class portfolios.The company's flagship products are the MSCI International Equity Indices, which include over 120,000 indices calculated daily across more than 70 countries, and the Barra risk models and portfolio analytics, which cover 56 equity and 46 fixed income markets. MSCI Barra is headquartered in New York, with research and commercial offices around the world.

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