

Case study

Buyside – hedge funds

Enhancing Portfolio Risk Decomposition and Surveillance for a Leading US Multi-Strategy Hedge Fund to Minimize Hedging Costs While Limiting Exposures

Background



The client faced challenges in assessing and monitoring the risk of complex portfolios. A US-based multi-strategy hedge fund was keen to develop a robust and customizable risk management system easily accessible to portfolio managers and risk teams

Crisil solution*



A. Solution construct

- During consultative discussions, it was recommended to build a multifactor model to estimate cross-sectional risk and develop the requisite mechanisms and a custom index
- Additionally, a suggestion was made to develop a single source of truth dashboard to monitor key metrics for portfolio and risk managers across the firm, enabling easy access to *MSCI Barra* models
- To deploy a real-time risk monitoring framework using *BarraOne* resources

B. Execution

- Worked with trading desks across asset classes to identify and define the relevant factors such as value, volatility, momentum, growth, etc
- Combined multifactor models to analyze the overall risk scenario, calculating factor risk contribution using variance-covariance and asset weight matrices
- Assisted in hedging risk factors at different levels and analyzed the performance of baseline vis-à-vis custom index on out-of-sample data
- Collaborated with the *MSCI* team to understand their programmable API to fetch data (rather than the GUI platform). Developed a Python code to get risk and performance attribution data from *Barra API* on a daily, weekly and monthly basis, as needed
- Developed a *Power BI* dashboard to monitor metrics such as return, volatility, tracking error, Z-score, exposure by factor (country, currency, industry and style), contribution to total risk and active risk

*CRISIL team is proficient in using Barra, Wolfe, Black-Litterman, BHB and Brinson models

Client impact



- Increased granularity of risk factors and surveillance helped reduce the portfolio hedging cost
- A broader benchmarking approach was adopted through the creation of a customized index comparable with the market benchmarks
- Client risk managers could access *Barra* risk and performance attribution data through simple SQL queries, rather than manually using *Barra* GUI or working through API
- Enhanced efficiency within the risk monitoring process and developed SOPs for dashboard maintenance - worked with a daily combined file size of over 1 GB and more than 1,800 risk and performance metrics at an asset-level detail

About Crisil Integral IQ (formerly Global Research & Risk Solutions)

Crisil Integral IQ delivers solutions and actionable intelligence to top financial institutions, driving strategic transformation, risk optimization, and operational excellence. Our offerings across research, risk, lending, analytics and operations have empowered clients to navigate complex markets, mitigate risks and unlock new opportunities. Our domain expertise, innovative solutions, future-ready technologies such as AI and data science give clients the confidence to accelerate growth and achieve sustainable competitive advantage. Our globally diverse workforce operates in the Americas, Asia-Pacific, Europe, Australia and the Middle East.

For more information, visit IntegralIQ.Crisil.com

About Crisil

Crisil is a global, insights-driven analytics company. Our extraordinary domain expertise and analytical rigour help clients make mission-critical decisions with confidence.

Large and highly respected firms partner with us for the most reliable opinions on risk in India, and for uncovering powerful insights and turning risks into opportunities globally. We are integral to multiplying their opportunities and success.

Headquartered in India, Crisil is majority owned by S&P Global.

Founded in 1987 as India's first credit rating agency, our expertise today extends across businesses: Crisil Ratings, Crisil Intelligence, Crisil Coalition Greenwich and Crisil Integral IQ.

Our globally diverse workforce operates in the Americas, Asia-Pacific, Europe, Australia and the Middle East, setting the standards by which industries are measured.

For more information, visit www.Crisil.com

Connect with us: [LinkedIn](#) | [Twitter](#)