



Risk Management

RiskMetrics for Hedge Funds

RiskMetrics Group is the leading provider of risk management services and solutions to the hedge fund industry. Our ASP solutions combine comprehensive market data and reference data with proven analytics based on industry-standard methodology and research.



Managed Services

A fully outsourced solution to enrich data, run risk analytics and produce standard and custom reports from single portfolios to enterprise-wide processing.

RiskManager

An interactive web-based system to identify, measure, and manage risk by combining analytics, methodologies, technology and data into one comprehensive integrated platform.

Web Services

An interface to integrate RiskMetrics Group's hosted best-of-breed data and risk analysis directly into your own applications.

RiskMetrics Group solutions are trusted by hedge fund managers worldwide for internal risk management and to satisfy the ever-increasing demands from investors for transparency.

RiskMetrics Group Addresses a Broad Spectrum of Risk



Client Benefits:

- + Implement the industry-standard RiskMetrics methodology, quantifying VaR, marginal risk contributions, component risk exposure and sector exposures through Monte-Carlo, historical or parametric analyses.
- + Conduct what-if scenario analysis and stress tests to present you with a complete picture of risk.
- + Perform calculations using historical time series data.
- + Perform analysis on asset selection, hedge effectiveness, pairs analysis and historical market behavior.
- + Generate analyses in real time for pre-trade simulations and post-trade portfolio reporting.
- + Integrate credit analysis into your portfolio management framework.
- + Identify correlations between positions, strategies, or major market indices.
- + Model complex instruments using your own internal price scenarios or first and second order sensitivities.

RiskManager in Use

Make Informed Hedging Decisions

In this example, you can see how a convertible arbitrage trader can mitigate his risk exposure by using RiskManager.

- + The Manager takes a long position in a convertible bond (CB) (GAP Stores 5.75% 3-15-2009) with a \$2,074,453 market value. **Total 1 day-VaR (95% CF) is \$41,199.**

Market Value		TOTAL		VaR (MC 95%)		ISSUER-SPECIFIC RISK		DVO1 IR	
NAME	TOTAL	TOTAL	EQUITY RISK	IR TOTAL	IR MARKET RISK	VEGA RISK	VEGA RISK	TOTAL	
CB	2,074,453	41,199	39,734	2,011	762	1,681	12,614	-74	
Gap 5.75% 3-15-2009 CB	2,074,453	41,199	39,734	2,011	762	1,681	12,614	-74	

- + To hedge the original convertible bond position, the manager shorts the underlying stock. In doing so, RiskManager calculates how effective the manager was in **reducing equity exposure**. In this example, total **portfolio VaR was reduced by 70%, from \$41,119 to \$11,971.**

CB+EquityHedge	603,069	11,971	1,663	2,011	762	1,681	12,614	-74	
Equity Gap Short	-1,471,384	41,260	41,260	-	-	-	-	0	
Gap 5.75% 3-15-2009 CB	2,074,453	41,199	39,734	2,011	762	1,681	12,614	-74	

- + In addition to focusing on market risk, managers must **mitigate credit risks**. RiskManager displays how effectively credit default swaps can inoculate a portfolio against changes in credit spreads as well as default risk. In this example, **issuer specific risk was reduced 92% from \$1,681 to \$124.**

CB+CDSHedge	2,074,453	39,445	39,734	717	747	124	12,614	-80	
CDS Gps 5Y (buy protection)	0	1,858	-	1,858	66	1,872	-	-6	
Gap 5.75% 3-15-2009 CB	2,074,453	41,199	39,734	2,011	762	1,681	12,614	-74	

- + Whereas the previous two hedging strategies successfully reduced risk, RiskManager can also demonstrate when a particular hedging strategy fails. In an attempt to reduce the portfolio's **sensitivity to movements in interest rates (DVO1)**, the manager shorts a US Treasury Bond, to offset any loss of the CB as a result of increasing rates. In this case DVO1 is hedged, however the portfolio's total **VaR increased from \$41,199 to \$41,415.**

CB+IRHedge	1,911,241	41,415	39,734	2,292	1,221	1,681	12,614	-1	
Gap 5.75% 3-15-2009 CB	2,074,453	41,199	39,734	2,011	762	1,681	12,614	-74	
Short T-Bond	-163,211	774	-	774	774	-	-	74	

Customizable Stress Tests

- + RiskManager allows you to define scenarios that are relevant to your portfolio based on current macroeconomic and financial information.
- + Obtain a sense of your portfolio's exposure in abnormal markets by exploring a range of low probability events that lie outside of the predictive capacity of any statistical model.

TEST: Custom Int. Rate	PERMISSION: Shared	SIMPLE PREDICTIVE	
ASSET	NAME	CURRENT LEVEL	CHANGE BY
Equity	U.S. - S&P 500	1,171,420,000	-8,2300 %
Equity	U.K. - FTSE 100	9,373,108,574	-9,0000 %
Interest Rate	USD Gov't (10Y)	4,646,718	-5,9000 %
Interest Rate	JPY Gov't (10Y)	1,431,622	-5,3400 %
Interest Rate	Eur Gov't (10Y)	2,285,513	-5,3400 %
Currency	Japanese Yen	0,009308	-2,8900 %

A Sample Of Risk Statistics Used By Hedge Funds Include:

Market Exposures

- + Market Value (Long, Short, Net, Gross) in any Currency
- + Notional
- + Absolute & Relative Weights
- + Duration
- + Contributional Duration
- + Volatility
- + Bond Equivalents
- + Beta

Sensitivities

Stress Tests

- + Global Sensitivities
- + Specific Sensitivities
- + Historical
- + Predictive

PVBP

- + Interest Rates +/- shift as Delta
- + FX, Spread, Vol, etc...

Greeks

- + For Equities, Commodities, FX, Bonds
- + Delta, Gamma, Vega, Theta, Rho
- + Spread Delta, Spread Gamma

Value-at-Risk

Methodology

- + Monte Carlo
- + Historical
- + Parametric
- + Customizable Parameters: Variable Sampling Frequency, Horizon, Lookback Period, Decay Factor

Statistics

- + VaR
- + Incremental VaR
- + Marginal VaR
- + Risk Contribution
- + Standard Deviation

For more information on this and other solutions from RiskMetrics Group, please email marketing@riskmetrics.com, visit www.riskmetrics.com, or call:

Chicago +1 312.977.1707
 Frankfurt +49 (0) 69.2729.8659
 London +44 (0) 20.7842.0260
 Melbourne .. +61 3 9642.2062
 New York +1 212.981.7475
 Paris +33 1 42.68.51.42
 Rockville +1 301.556.0540
 Singapore ... +65 6826.9339
 Tokyo +81 3 5275.7821
 Toronto +1 416 364.9000

RiskMetrics for Hedge Funds provide comprehensive market data services with proven analytics.

About RiskMetrics Group:

RiskMetrics Group is a leading provider of risk management products and services to financial market participants. By bringing transparency, expertise and access to the financial markets, we help investors better understand and manage the risks inherent in their financial portfolios. Our solutions address the market, credit, portfolio, governance, accounting, legal and environmental risks of our clients' financial assets. Headquartered in New York with 19 offices worldwide, RiskMetrics Group serves more than 2,300 institutions and 1,000 corporations in 50 countries. For more information, please visit www.riskmetrics.com.



RiskMetrics Group

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