The clarity hedge funds need to manage risk and protect alpha
Silo-driven risk analysis and decision making no longer meets the requirements of today’s investment world. Firms need an integrated view of risk with the ability to see both market and credit exposures across all asset classes – at any point in time. Smart firms can gain a competitive advantage by utilizing comprehensive risk management solutions that enable actionable real-time decision making.

**A More Intelligent Risk, Trading and Portfolio Management Solution**

Broadridge Portfolio Risk delivers a unique offering specialized for hedge funds and asset managers that can be leveraged by hedge fund administrators and prime brokers: comprehensive risk management tools integrated with portfolio and order management software in a single efficient, compliant, and cost-effective solution.

Firms can manage the full trade lifecycle in one application with real-time market data across all asset classes, analytics and an extensive, customizable library of reports. Pre-and post-trade compliance tools and alerts are fully integrated with exceptional data management and a flexible user interface. Portfolio Risk is the ideal for hedge funds that need a dynamic, effective, and efficient risk management platform but want to minimize the technology spend.

Comprised of three integrated modules, working together seamlessly, the solution can be tailored as necessary to fit the evolution of any firm.

**Benefits**

- Mitigate risk across an entire portfolio or at the trade level reducing alpha leakage and locking in hedges earlier and cheaper
- Control risk exposure to both market and counterparty risk
- Cloud-based infrastructure reduces IT cost while building industry standard DR that investors demand of funds
- Reports are highly configurable for client needs and empowering decisions, as well as providing reports to mobile media for ease of access anywhere
Portfolio Risk

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<td>• Scenario Analysis - Deterministic, historical and predictive</td>
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<td>• Real-time sensitivities at security, position, and aggregate levels</td>
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<td>• Customizable pricing rules</td>
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A Unified Order and Portfolio Management Platform

Order and Portfolio Management Features

• Flexible trade modeling and re-balancing for order generation.
• Complete electronic trading and order routing solution with FIX connectivity to executing brokers, trade algorithms, and industry-leading EMS’s platforms.
• Comprehensive position and P&L viewer with seamless integration to real-time market data feeds.
• Integrated pre- and post-trade compliance tools including real-time alerts, customizable rules, and full audit reporting for firmwide compliance management.
• Dynamic connectivity with prime brokers to identify short availability and locates in real-time, with complete borrow fee and rebates tracking.
• Industry-leading data integration to automatically setup your security master reference data and process your corporate actions.
• Two-way counterparty communication and automated daily reconciliation.
• Robust reporting tool to create custom reports, integrate 3rd party data, and automate report generation & delivery.
The Multi-Asset Class Valuation and Risk Engine

Risk Master, a fully-featured and flexible risk management engine allows firms to intelligently mitigate risk across an entire portfolio or at the trade level. This powerful tool works for multiple asset classes. It allows clients to control their risk exposure to both market and counterparty risk, and to quickly act upon any identified risk tolerance breaches, facilitating better enterprise-wide decision making.

Know Your Market and Credit Risk Exposure

Risk Master delivers the necessary tools to monitor your exposure to market and credit risk across markets, trades, counterparties, and portfolios. The powerful analytics platform allows firms to price and model any instrument providing a consistent valuation framework for pricing to enable improved hedging of complex portfolios.

Scenario Analysis

- Analyze the impact of deterministic scenarios, by shifting market inputs such as price, currency rate, yield curve, volatility surface
- Use historical data to generate scenarios
- Deploy predictive analysis to allow the client to define shifts in core market variables. The Risk Engine then propagates to the market environment via multiple linear regression

Sensitivity Analysis

- Identify concentrations of interest rate and credit spread risk
- Aggregate sensitivity for any portfolio to each tenor point on each yield or credit curve
- Calculate portfolio sensitivities to equity prices and FX rates
- Greeks

Value-at-Risk (VaR)

- Calculate VaR and Stressed VaR intraday (including marginal, incremental, component, conditional [ETL/ES])
- Perform calculations on any set of positions and portfolios

Credit Valuation Adjustment (CVA)

- Quantify future exposure by assessing credit quality of counterparty, and translating this exposure into a credit charge (CVA)

Potential Future Exposure (PFE)

- Estimate the loss if counterparty defaults at some time in the future

Back-Testing

- Test the validity of VaR calculations versus portfolio P&L using both clean and dirty methods

Risk Master
Provides:

- Customization and flexibility, enabling the valuation, simulation and reporting of assets and risk factors tailored to specific requirements.
- Coverage of multiple asset classes and risk perspectives across an extensive range of risk factors, asset classes and investment strategies
- Full integration with industry leading Numerix® CrossAsset Library, representing industry best-practice in speed and accuracy, enabling rapid calculations for even the most complex instruments
- Scalable risk management and reporting, enabling firms to focus on primary business activities.
Flexible On-Demand Reporting

Through a comprehensive combination of tools, Broadridge delivers flexible risk reporting that supports regulatory compliance and enables risk-informed investment decision-making. Firms can choose from an extensive list of reports, including all risk measurements plus portfolio mark-to-market and P&L reports. Configuration of any report is highly flexible allowing clients to select the market data to be used, pricing policies to be applied, and numerous additional select variables.

Regulatory Reporting

Calculate and report regulatory risk requirements such as AIFMD and Form PF

Back Testing

Supports several types of VaR reporting

Back testing reports compare daily VaR results to P&L results and records the number of exceedances (number of times that daily P&L exceeds VaR)

Sensitivity Analysis

Quickly visualize concentrations of interest rate and credit risk or currency and equity exposure

Report Manager
The Complete Solution

Broadridge provides a flexible and scalable solution for managing the risks throughout your entire organization. Portfolio Risk and Risk Master can be fully integrated across all your existing systems, service providers and data partners. We offer a model for the front-office that is differentiated by neutrality, strong risk and compliance capabilities. We offer a platform that functions across global locations and investment strategies and is supported by a robust trading network and third-party connectivity.

Powered by High Quality Data

Consistent high-quality data is crucial to the viability of any risk platform. Our data management experience ensures that we can capture/manage full trades, positions, and all reference data feeds to support a risk infrastructure that lowers the total cost of ownership.

Grid Computing Functionality

With Risk Master and Grid Computing functionality for high computational performance, along with a GUI built specifically for trade capture, the system takes you beyond the limits imposed by the Excel application interface. This feature makes the platform infinitely scalable to handle the largest and most complex portfolio analysis and risk scenario testing.

Flexible Deployment

Risk Master is a scalable, future-proof platform implemented with distributed architecture based on the Microsoft.NET framework to manage various deployment possibilities—from single-user to enterprise-wide rollouts. Deployment is turnkey and can plug into your existing operations infrastructure with no need to re-architect systems, speeding time to market.

Broadridge's secure, cloud-based delivery model offers significant value to both Portfolio Risk and Risk Master with the strength of our technology infrastructure and our global service model to ensure rapid implementation, constant uptime and around the clock support.

Data Security and Infrastructure

Broadridge's highly scalable systems are built to support our clients' growth, providing 24/7 reliability even during periods of extreme volatility and volume. Broadridge is one of only nine U.S. financial industry providers to receive ISO 27001 certification, and two Tier III Plus data centers help ensure the security of client data.

Relationship Model

Broadridge delivers deep domain knowledge and 50+ years of experience supporting financial firm operations with a dedicated account manager and centralized technology help desk.
Comprehensive Asset Class Coverage

**Equity Baskets**
- Basket Notes with Knock-Out
- Custom Equity Basket-Linked Notes/Swaps
- Best-of/Worst-of Basket Options

**Fixed Income**
- Fixed Coupon Swaps/Bonds
- Basis Swaps
- Power Reverse Dual Currency Notes
- CMS-Linked Swaps/Bonds
- Range Accruals
- Zero-Coupon Swaps
- Callable Zero-Coupon Bonds/ Swaps
- CC Spreads
- CC Chooser TARNs
- Inverse Floaters
- FX Digital Floaters
- FX-Linked TARNs/Inverse Floaters
- Rainbow Swaps/Bonds

**Equity**
- American Options
- European Index Options
- Compound Index Options
- Dividend Swaps
- Variance Swap
- Index Futures
- Performance-Linked Swaps/Notes
- Custom Equity-Linked Notes/ Swaps
- Hybrid Index Corridor Option

**Credit**
- CDS
- CDS Options
- CDS Indices
- CDS Index Options
- Single-tranche CDOs
- CDO Tranche Options
- NTD

**Vanilla Rates**
- Swaps/Swaptions
- Caps/Floors
- Forward Rate Agreements
- Amortizing Swaps

**FX**
- Swaps/Forwards
- Non-deliverable Forwards/Options
- European Options (Fade-In/Fade-Out, Barrier)
- Bermudan Fade-In Options
- Accelerators
- FX TARNs
- Digital Range Accrual with Knock-Out
- Custom FX- and FX-Basket-Linked Notes/ Swaps

**Exchange Traded**
- Government Bond Futures
- Short Rate Futures

**Custom Derivatives**
- Callable Path-Dependent Products
- Structured Products