

EVMTech▶



Risk#

Pushing the boundaries of risk modelling

Overview

Risk# is a data analysis, risk modelling, and risk aggregation platform designed to develop stochastic models that can be maintained centrally while enabling their efficient deployment to end-users across business units or legal entities. This approach has the significant benefit that application development and usage are separated with no impacts for users in an operating environment.

Risk# as a modelling platform offers significant flexibility to cover varying modelling needs. This is achieved by using the rich modelling functionality of Risk# and by introducing user-defined functionality in standard C# language that seamlessly integrates with other functionalities of the Risk# platform.

Risk# as a calculation platform provides a powerful approach to efficiently run models, track changes and conveniently test multiple parameter assumptions.

The highlights of Risk# include:

- ▶ Advanced risk modelling without the need to write complex code
- ▶ Workflow support from development to deployment
- ▶ Support of model auditing and regulatory compliance standards
- ▶ Integrated reporting functionality with automated report updates
- ▶ Increased implementation efficiency and reduced time-to-build costs
- ▶ High-performance computational capability reduces calculation times to minutes

Selected Application Areas

Operational Risk

Operational risk modelling comprises extensive data processing, data analysis, risk modelling and risk aggregation. Risk# supports these needs as part of its generic functionality. It enables users to perform database type operations such as filter, sort, join, multi-dimensional look up, group or map to process data in a very user-friendly way, both from implementation and maintenance viewpoints. Data analysis is made simple through extensive data plotting, fitting, bootstrapping and other user-defined functionality. Risk# supports risk aggregation functionality by covering standard copulas.

Non-Life

Non-life modelling includes many lines of business across property, casualty and natural catastrophe risks. For each line of business information about new business, unearned business, reserves, development patterns, loss indexing, reinsurance and intra-group transactions must be taken into account in the risk aggregation process. Risk# provides a powerful platform that covers all these aspects with strong model governance support and the ability to maintain and further develop the models without impacting the operating environment.

Capital Computation

Stochastic risk modelling and risk aggregation functionality can be used to compute and to allocate regulatory and economic capital models. Implementation and run time are significantly reduced by Risk#'s advanced computational algorithms, enabling users to run multiple model assumptions and stress tests in almost real time.

Generic Modelling

With Risk# you can develop generic models for pricing or risk management applications and deploy them swiftly to end-users. The models are developed and maintained centrally. The end users will only be able to run the models within the scope that is specified to generate the desired outputs.

Main Product Features

Data Management and Processing

- ▶ Advanced data processing using tables in combination with SQL-type table operations
- ▶ Simple import/export functionality with standard database applications and Excel
- ▶ Support of folder and meta data hierarchies

Data Inference

- ▶ Comprehensive library of parametric distributions
- ▶ Loss data and scenario data fitting

Stochastic Modelling

- ▶ Monte Carlo simulation and numerical computations
- ▶ Comprehensive dependency modelling
- ▶ Insurance mitigation modelling and netting functionality
- ▶ Capital computation with allocation of capital to risk factors

User Convenience

- ▶ Support of advanced code writing without extensive programming knowledge
- ▶ User-friendly scripting functionality
- ▶ Superior performance

Compliance

- ▶ Comprehensive logs and functionality to re-run log files for audit or model validation
- ▶ Flexible report generation with automatic report updates
- ▶ Tracking functionality for model parameter changes
- ▶ Possibility to develop and deploy models centrally to several end-user groups.

Flexibility

- ▶ Ability to introduce user-defined functions and classes in standard C# language
- ▶ Ability to link to Excel, R and Mathematica and call the respective functions within the Risk# platform
- ▶ Ability to link to C# libraries and generate C# code for developed models

Technology

Risk# is implemented in standard .NET technology.

Risk# leverages the power of object-oriented design as the basis for creating powerful applications, and allows for integration with other .NET components. It supports client server architectures that simplify creation of enterprise applications.

Risk# allows great flexibility in object persistence, so business objects can use virtually any data sources available. The framework provides the flexibility to optimise performance, scalability and security with no changes to code in the user interface or business objects.

About EVMTech

EVMTech is a risk management advisory and software company serving the financial services sector. EVMTech is widely recognised in the areas of operational risk and stress testing. The core expertise provided by EVMTech includes development and implementation of frameworks that meet regulatory and internal capital requirements of our clients. EVMTech software products provide advanced technology and rich functionality. Our clients are already leveraging EVMTech experience and services in capital modelling around the globe.

For more information please visit www.evmtech.com