

# DEFINIO REPLY RISK ANALYZER

Definio Reply Risk Analyzer has been created to process and develop new advanced models of evaluation of financial risks and, using these, to help investors formulate consistent risk management policies.

## SCENARIO

*"Risk management is the process by which we measure or estimate risk and then develop strategies for managing it."*

*"Market risk is the probability of obtaining a different yield to the one expected. In particular it represents the potential profit or loss of a position or portfolio over a particular time horizon, as a result of changes in market variables (interest rates, share quotations, exchange rates, commodities, etc.)".*

Wikipedia

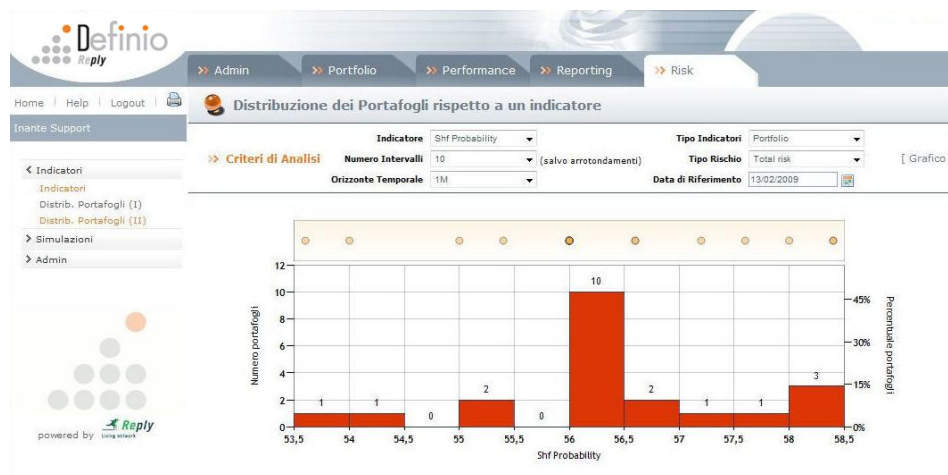
## SOLUTION

Definio Reply Risk Analyzer is a system for the analysis of financial portfolio risks. The system is based on a statistical model of estimating financial risks. It is a simulative model that enables the generation of financial scenarios most closely replicating the real market dynamic, using empirical data to reproduce the salient features of financial returns.

The system uses innovative simulation methods and an original integrated approach for the simultaneous evaluation of the contribution of each part of a financial portfolio to the total risk. It is also possible to measure the average and marginal contribution of each share or group of shares, since the analysis is performed at the level of the individual share and it is possible to rebundle it up to the desired level. Finally, it is possible to break down the contribution to the total risk from the market, credit risk, default risk and a portfolio's liquidity risk.

The system is therefore able to calculate all the ex-ante risk indicators of financial portfolios, such as VaR, CVaR, Relative VaR, Tracking Error, Volatility, Downside Volatility, Shortfall probability and Default Risk on whatever time horizons selected. The indicators calculated are of an absolute and relative type for shares, portfolios and all their combinations.

There is therefore a wide variety of possible indicators with which to monitor individual portfolios and above all to monitor the effects of 'mass' phenomena on various segments of the clientele or managed assets.



All portfolios/customers can be analysed according to their characteristics and rapidly viewed, making it possible to identify particularly delicate situations. Very inefficient managements or those whose risk relationships are not in line with management policies can be immediately identified.

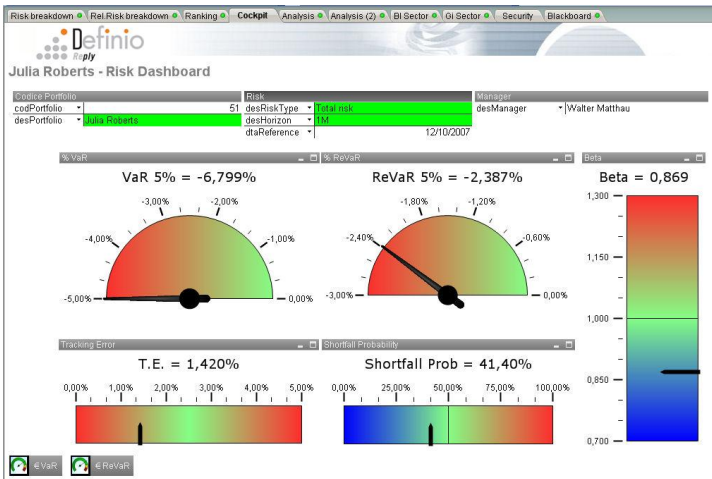
It is then obviously possible to analyse in detail individual portfolios along with all their

characteristic components and perform a prompt analysis of the risk measures for each individual financial instrument. Also, powerful what-if functions make it possible to evaluate the impact on risk indicators of any variations to the portfolios' asset allocation.

Key features	Key Benefits
A single and integrated environment for all financial and investment data	Completely web-based
Analyses of investments, their compositions and deviations from the reference benchmarks and associated strategies	Maintenance of growth of customer assets in line with set objectives
Calculation and analysis of risk indicators	Use of a sophisticated risk indicator model
Analysis and comparison of the risk measurement of an individual portfolio with an index, a competitor product or a reference rate	Possibility to analyse the various portfolios (real or simulated) independently or as an aggregate
Analysis and measurement of an individual instrument's contribution to the total risk of a portfolio or to one of its sub-portfolios	Possibility to simultaneously evaluate the contribution of each component of a financial portfolio to the total risk
Drafting of summary reports with the portfolios' distribution curves on the basis of their risk measurements	Possibility to simultaneously evaluate the contribution of each component of a financial portfolio to the compartmentalised risks (market, exchange rate, liquidity, default, etc.)
What-if analysis	Advanced analytical tools
Automatic feed from Information Provider	Option of using the entire system in service mode

With Definio Reply you can easily perform the following activities:

- monitoring of each portfolio constantly over time by the periodic calculation of risk indicators
- monitoring of portfolio aggregates, simulated portfolios and model portfolios
- analysis of the absolute risk of the individual portfolio and that of an index, a competitor product or a reference rate
- measurement of the risk contribution of the individual instrument compared to the total portfolio or to one of its sub-portfolios
- drafting of summary reports with the portfolios' distribution curves on the basis of their risk components



Obviously the system must be able to integrate both internal data from various sources and external data such as prices and rates of the instruments in the portfolios and the benchmarks.

The Definio Reply platform is equipped with connectors to external data sources that feed the Definio Data Layer component (Definio Reply's financial data management and organisation component).

These connectors allow the acquisition of data from the following sources:

- Administrative and Back Office systems (Olympic®, legacy systems, etc.)
- Market data from Information Provider (e.g. Bloomberg®, Thomson Reuters®, etc.)

**METHODOLOGY.** The methodology is a reasonable compromise between accuracy and computational efficiency. To this end the principal modelling choice involves the use of a Filtered Bootstrap based model for the following reasons:

- it is a known methodology, both academically and operationally, used as much for the evaluation of risks of financial institutions as for the evaluation of retail portfolio risks
- it brings together essential empirical aspects of the financial markets
- it has been successfully used by Risk Management groups and by Asset Management companies.

The model used estimates the entire distribution of returns of each asset in a portfolio taking account of changes of average, of volatility and correlations, as well as autocorrelation. No hypotheses of normality are made about the expected distribution of returns. The model enables a coherent ex-ante evaluation of absolute risk for a number of portfolios simultaneously, combining them in hierarchies ('portfolio trees'),

analysable at various levels. It is thus possible to analyse the risk contribution of the individual strategies contained in a portfolio.

**SERVICE.** The Definio Reply Risk Analyzer solution can be used in service mode via a complete outsourcing service and the remote supply of risk indicators and analytical tools.

The service provides the ex-ante estimate of all financial portfolio risk indicators, such as VaR, CVaR, Relative VaR, Tracking Error, Volatility, Downside Volatility, Shortfall probability and Default Risk on whatever time horizons chosen. The service also offers the possibility to manage the customer company database necessary for analysis, updating of the records and the realisation of periodic reports in paper or electronic format. Finally, there is also a functional training phase specifically dealing with the application and the risk policy to implement.

As an alternative to completely outsourcing the system, a data supply service is offered which supplies remotely calculated scenarios with the consequent calculation and analysis of the portfolio risk indicators performed via a specific module installed at the customer company.

## REPLY VALUE

Besides the Definio Reply platform, Reply is able to supply all the direct services for the system for personalisation and, as a consequence, for the overall objectives of the change programme.

Specialised personnel accompany customers during the project's implementation phases. Reply has its own team of specialists capable of covering all the planning phases from design phase to the implementation and maintenance of the systems.



Definio Reply is a technological platform capable of directing the demands of management, analysis and reporting on portfolios of financial instruments (managed, administered and owned) Definio Reply provides a concrete and efficient response to the increasingly pressing requirements of the managed funds market, in terms of analytical tools and decision-support.

Definio Reply  
[www.definioreply.eu](http://www.definioreply.eu)



Reply [REY.MI] is specialized in design and implementation of solutions based on new digital media and communication channels. Operating through a network of highly focused companies, Reply provides the leading European Groups in the Telco & Media, Manufacturing and Services, Banking and Insurance Industries as well as the Public Sector with an effective support aimed at defining and developing business models enabled by the Web 2.0 and by the convergence paradigms. Reply services include: Consultancy, System Integration, Application Management and Business Process Outsourcing.

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