



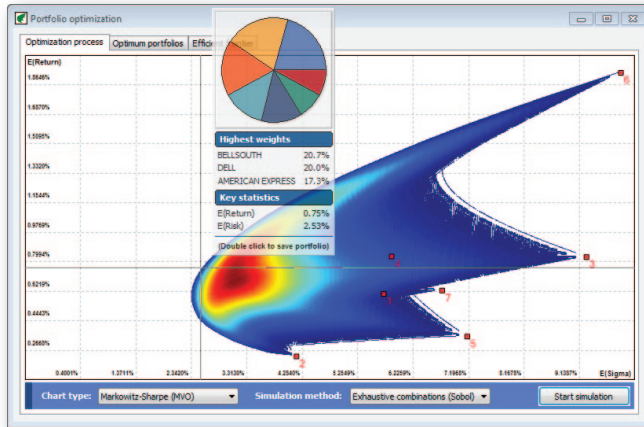
OPTIFOLIO

Strategic Portfolio Optimization and Analysis

Investment Funds | Insurance companies | Banks | Business Schools | Regulatory agencies

► Strategic portfolio optimization

Investment portfolio analysis and optimization are recurring tasks for both the investment management industry and academic institutions. **OptiFolio** allows you to automate those processes and make them fast, robust and interactive even for large portfolios containing various asset classes, currencies and subject to an arbitrary number of investment constraints.

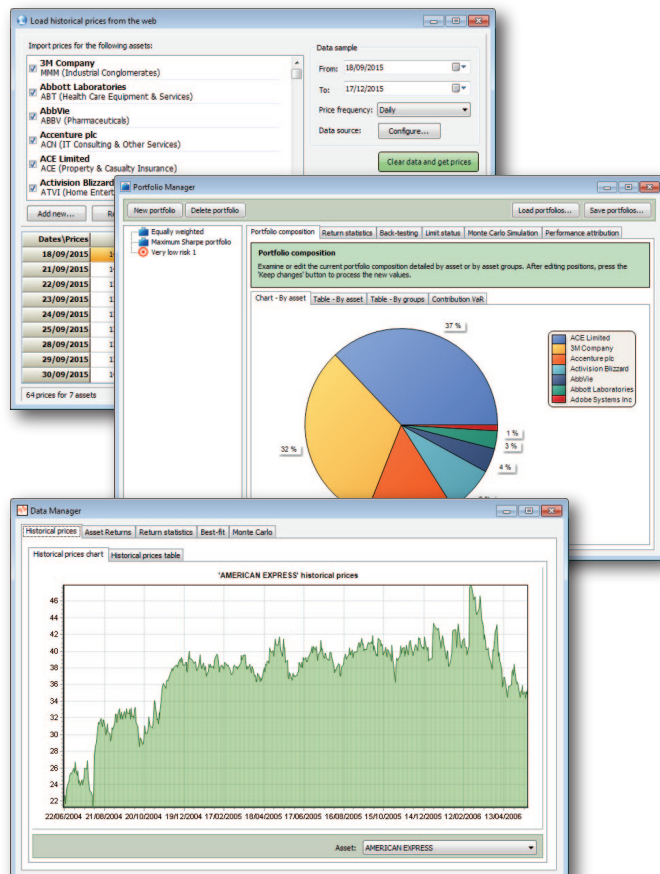


OptiFolio makes it possible to automatically apply a wide range of models and specialized tools, such as:

- Markowitz-Sharpe optimization model
- Conditional Value-at-Risk optimization
- Inclusion of investment restrictions
- Black-Litterman model adding user views
- Performance attribution analysis
- Contribution-VaR risk decomposition
- Monte-Carlo forecast of assets and portfolios
- Transaction costs, backtesting, and more.

► Portfolio management

OptiFolio allows you to manage multiple portfolios and assets at the same time. Market data and investment positions can be loaded directly from the web, MS Excel® documents or standard delimited spreadsheets.

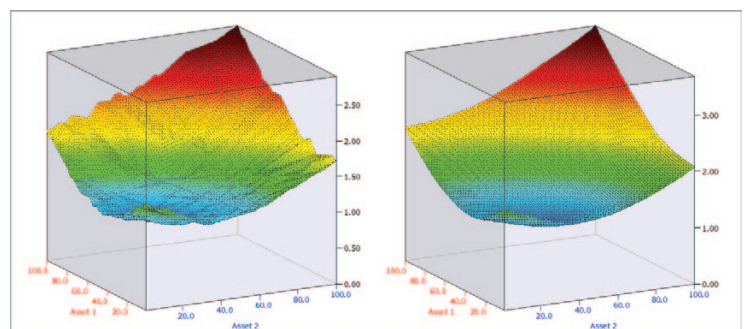


“OptiFolio is the most advanced portfolio optimization system available on the market.”

Emirates NBD, Dubai

► A visual experience

Thanks to reports and charts thoughtfully designed by investment experts, the analysis of investment strategies in **OptiFolio** is transparent and intuitive. As a result, not only professional market analysts and investors benefit from **OptiFolio**; the system is also a perfect academic tool for investment and risk analysis courses at both undergraduate and post-graduate level.



► Interactivity for a better insight

OptiFolio employs cutting-edge global optimization algorithms to analyze the efficient frontier of investments in more detail and to identify the best strategies depending on the investor's level of risk tolerance. The advanced system of data visualization makes it easy to examine the strategic position of any portfolio within the feasible set of portfolios meeting the required criteria of expected return, risk and investment limits.

The user is able to interactively navigate the efficient frontier of portfolios, save portfolios of interest to review in more detail, and even share those interactive results on the web.

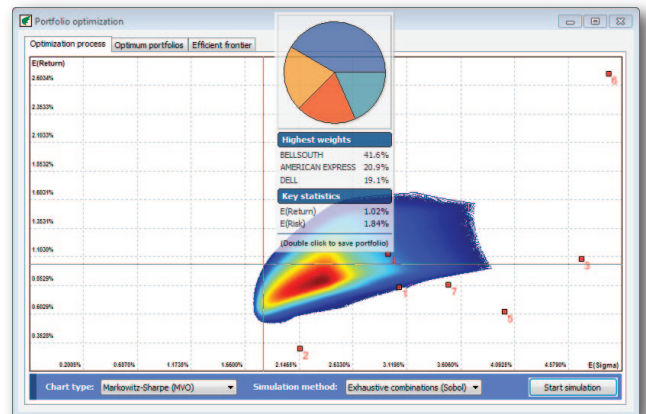
All portfolios in the system can be automatically analyzed in terms of parametric and nonparametric Value-at-Risk approach, compliance with limits, risk-adjusted profit, forecast, performance, back-testing, etc.



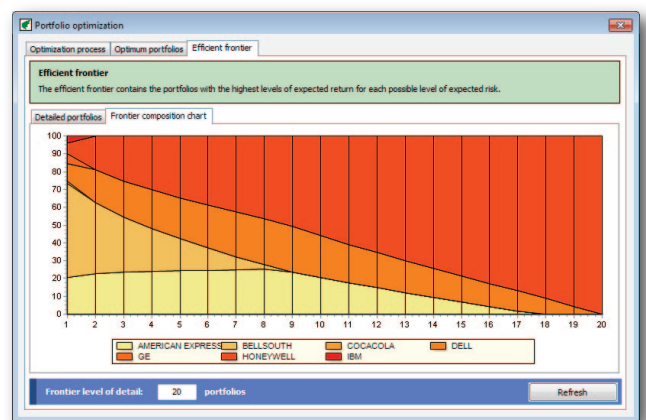
► Tools for advanced users

In addition to identifying optimal investment strategies in a fully automated mode, **OptiFolio** allows more advanced users to define and collect information on market risk factors -such as exchange rates and interest rates- and configure the sensitivity of each asset to shocks related to those factors. This makes it possible to include in the portfolio assets which are normally difficult to analyze, such as illiquid stocks, bonds sensitive to more than one segment of the yield curve, fixed income funds, forward contracts, options, swaps, etc.

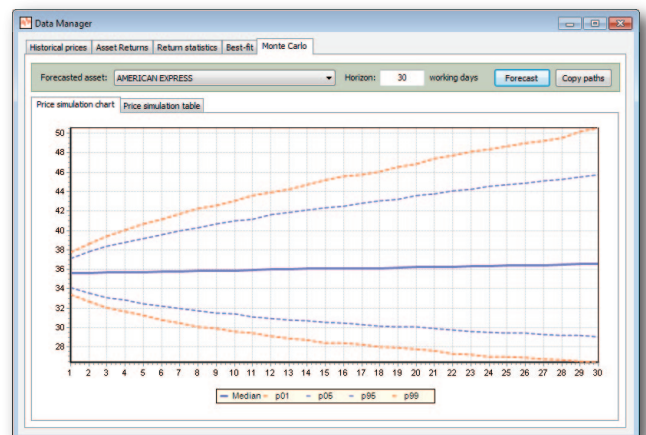
Also, analysts can introduce their own assumptions and views about the behavior of market risk factors and assets in order to fine-tune the results of the various models applied by the system.



Exploring the feasible sets under investment restrictions



Optimal portfolio compositions with different levels of risk



ProMonte-Carlo prediction of the expected value of an asset

Assets / Risk Factors	BANK OF AMERICA	COCACOLA	WALMART	BUEENAVENTURA	RATE_0_30	RATE_31_180	RATE_181_360	RATE_361_1080	RATE_1081_1080	USDOPEN
BANK OF AMERICA	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
COCACOLA	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WALMART	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUEENAVENTURA	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
BOND 2031	0.0000	0.0000	0.0000	0.0000	-0.1000	-0.2000	-0.6500	-2.1000	-8.9000	0.0000
BOND 2018	0.0000	0.0000	0.0000	0.0000	-0.5500	-1.1500	-4.4000	-1.1000	0.0000	0.0000

Adjustment of sensitivities between assets and risk factors

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