

# FIRM® Portfolio Analyzer with Investment Optimizer

RISK SOLUTIONS | STRATEGY SHEET

***A Strategic Asset Allocation analysis using Conning's investment optimization software provides critical insights into investment risk. With FIRM® Portfolio Analyzer + Investment Optimizer, portfolio managers can adjust their strategies to increase investment performance and reduce portfolio risk within the bounds of a clearly defined risk appetite.***

Conning's FIRM® Portfolio Analyzer with the added Investment Optimizer module can facilitate a truly comprehensive approach to Strategic Asset Allocation. FIRM® Portfolio Analyzer combines an award-winning\* economic scenario generator with a comprehensive investment risk module, as well as a sophisticated management decision rules engine. For additional value, projected liability cash flows and reserves can be imported from existing actuarial models for true asset-liability management.

Competitive advantages of Conning's FIRM® Portfolio Analyzer + Investment Optimizer include:

**Scenario-level integration of liability projections.** Conning's FIRM® Portfolio Analyzer + Investment Optimizer is the only investment optimization platform that can incorporate imported liability cash flows and reserves to provide full asset-liability management. The distribution of liability outcomes includes realistic distributional behavior, including tail behavior and correlations with investment returns.

**Scenarios driven by Conning's award-winning\* GEMS® Economic Scenario Generator (ESG).** Our ESG and capital markets model simulates realistic relationships between nominal yields, real yields, inflation, equity returns and credit markets, with those variables driven correctly through detailed asset models.

**Flexibility in the asset classes used for optimization.** Users can define any number of asset classes and let the Investment Optimizer consider allocations across them. At one extreme, the model could use only broad classes, such as fixed income and equity, or the model could separately consider numerous types of fixed income sub-classes, stratified by maturity and credit quality, and multiple types of equity and alternative investments.

**Flexibility in the metrics used for optimization.** Users can define the overall metrics to be optimized, the time horizon to be considered, and the statistic used to measure risk, including standard deviation, one-sided standard deviation, VaR or TVaR.

- » Stochastic analyses of multi-portfolio trading strategies on both market value and book value bases
- » Investment risk analysis performed on an aggregate asset class basis or individual security basis
- » Ability to add customized correlated market indices
- » Ability to model asset prices and cash flows at the security level
- » Interest-rate derivatives, inflation-linked derivatives, and equity derivatives
- » Realistic relationships among asset class returns
- » Asset aggregation at multiple levels
- » Powerful built-in analytics and reporting

## Learn More

Can your business afford to operate without a sophisticated investment risk platform? Learn how FIRM® Portfolio Analyzer and the Investment Optimizer can facilitate better decision making, risk management, and added business growth.

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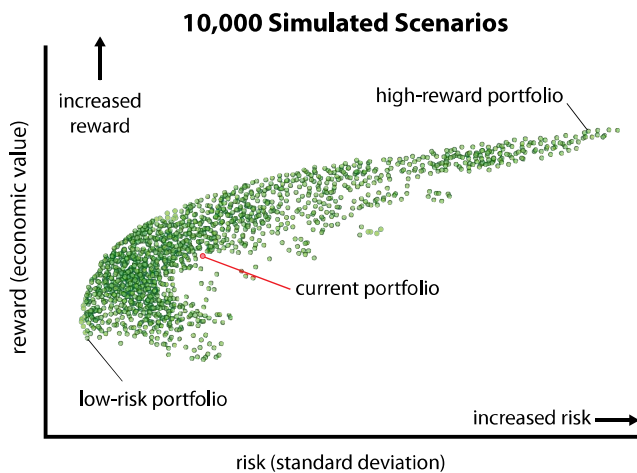
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\*InsuranceRisk Best Economic Scenario Generator Software, 2011, 2013 & 2014; Asia Asset Management Magazine Best Risk Management Technology 2014; Risk.net ESG Buy-Side Award 2016; Insurance ERM Best Stress Testing & Scenario Solution, 2017

## Investment Optimization

Strategic Asset Allocation (“SAA”) is a part of a robust asset-liability management program that evaluates the investment and financial implications of alternative asset allocation strategies in an attempt to maximize a company’s specific business objectives while staying within its identified risk tolerance. The strategy that does the best job of satisfying both the company’s objectives and its risk tolerance is referred to as the optimal investment strategy.



In the past, investment strategy analysis was undertaken by using financial projection models to evaluate pro-forma financial results of chosen alternative investment strategies, and then selecting the strategy that produced results closest to the desired objectives and risk tolerance. However, this brute-force process was tedious and did not assure that any of the strategies under evaluation were technically efficient, much less optimal.

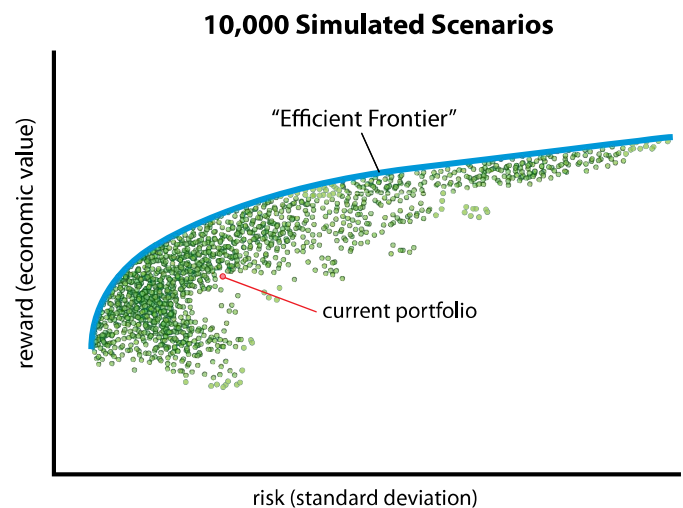
A more robust method of identifying efficient investment strategies is to use a stochastic optimization engine. These engines are designed to quickly evaluate thousands of possible investment strategies and identify those strategies that provide the maximum reward for a given level of risk. There are many objective functions (risk and reward measures) that can be used for evaluating strategic initiatives, ranging from simple market-value/economic factors up to and including the impact of liability effects, accounting results, and even regulatory capital considerations. In traditional asset-only efficient frontiers, the objective functions are

typically defined as total investment return (reward measure) and the standard deviation of the investment return (risk measure). When liability cash flows and reserves are imported, the reward measure can be defined as economic value.

The set of all portfolios that maximize reward at different levels of risk is referred to as the efficient frontier. While all investment strategies that make up the efficient frontier are efficient by definition, there is only one strategy that is optimal. The optimal investment strategy is the highest-rewarding efficient investment strategy that satisfies the company’s specific risk tolerance.

The exercise of strategic asset analysis additionally has the advantage of providing a basis to visualize, articulate and validate the risk appetite of the company, helping to establish a consensus view within management.

Strategic Asset Allocation can be performed on an asset-only basis or on an integrated asset-liability basis that takes into account the full risk profile of an enterprise, including liabilities and capital requirements. In the latter case, risk and reward are measured by the overall economic value of the company. Such an analysis has the advantage of illustrating the impact of alternative strategies on capital requirements such as the SCR.



## About Conning

Conning (www.conning.com) is a leading global investment management firm with a long history of serving the insurance industry. Conning supports institutional investors, including pension plans, with investment solutions and asset management offerings, award-winning risk modeling software, and industry research. Founded in 1912, Conning has investment centers in Asia, Europe and North America. Conning’s software and advisory services support insurance and pension risk modeling needs, providing insights for decision making, regulatory and rating agency compliance, strategic asset allocation and capital management. Conning’s risk management software platform includes the award-winning GEMS® Economic Scenario Generator, FIRM® Portfolio Analyzer and ADVISE® Enterprise Risk Modeler.

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