

GEMS[®] Economic Scenario Generator

RISK SOLUTIONS | PRODUCT SHEET

An economic scenario generator (ESG) enables financial services companies to model future states of the global economy and capital markets for the purposes of portfolio and risk management. The analysis of a stochastic distribution of possible economic futures—a distribution which includes unexpected but plausible outcomes—is critical for testing a business model under a wide variety of economic conditions.

Conning's GEMS[®] Economic Scenario Generator is an award-winning*, state-of-the-art stochastic economic scenario generator with leading-edge economic and financial models, including alternative assets and a wide range of derivatives. GEMS[®] provides a comprehensive analysis of the risks that firms face, the relationship between those risks, and the potential rewards in retaining them.



Advanced Asset Models

GEMS[®] Economic Scenario Generator ("GEMS[®]") offers both real-world and risk-neutral functionality and supports integrated economies and capital markets in North and South America, Europe, Asia, and Australia. GEMS[®] comes with a comprehensive set of parameterized asset classes that is unrivaled by other ESGs, and further asset classes can easily be added through built-in system functionality.

GEMS[®] is distinguished by its ability to simulate **realistic tail risk events** due to the structure of the stochastic models and the methodology used to calibrate the models. Additionally, the modeled correlation between variables within GEMS[®] means that its simulations are robust and consistent within economies, across economies, and over multiple time horizons.



Supports a Wide Range of Applications

GEMS[®] can be deployed as a desktop application or via the cloud. The software incorporates automation workflow tools and a command line interface which allow easy integration of the software into a wide range of business processes:

- » Strategic Asset Allocation
- » Economic capital modeling and stress testing (Solvency II, ORSA, rating agency reviews)
- » Market-consistent valuation
- » Product design
- » Business planning
- » Hedging strategies
- » Climate risk reporting with Conning Climate Risk Analyzer™

Financial Instruments

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|-------------------------------------|
| Government Bonds |
| Defaultable Sovereigns |
| Inflation-Linked Bonds (TIPS) |
| Municipal Bonds |
| Corporate Bonds |
| Mortgage-Backed Securities |
| Collateralized Mortgage Obligations |
| Equity Indices |
| Real Estate |
| Customized Indices |
| 30+ Types of Derivatives |

*Market Scenario Generator of the Year, Risk.net Markets Technology Awards 2021



Robust Model Calibration

GEMS® calibrations combine the quantitative expertise of financial engineers with the market views of investment professionals. Some of the world's largest insurance companies use GEMS® on a day-to-day basis to help drive strategic decisions; their feedback ensures the model parameterization is robust and meets a variety of business needs.

Our historical database includes highly stressed environments such as 1929, 1987, 1998, 2008, and 2020, so our calibrations are capable of not only reproducing similar events but also generating never-before-seen crises of similar and greater magnitude. Additionally, a full range of integrated calibration and target parameterization tools allow clients to alter the base calibration to meet their internal management views or perform stress testing using the model.



GEMS® Economic Scenario Generator Is Distinguished By:

- » Default-free interest rate models which produce fully integrated nominal and real term structures
- » Corporate and municipal bond credit models that permit the simulation of stochastic rating transitions, defaults, and recovery
- » Integrated calibration tools for both real-world and risk-neutral applications
- » Comprehensive documentation library featuring user guides, model documentation, and validation reports
- » Ability to model asset prices and cash flows at the security level
- » FX model which provides consistent inter-economy behavior, including the ability to model currency pegs
- » Wide range of standard asset classes and market indices, along with the flexibility to create customized asset classes
- » Comprehensive interest rate, equity, credit, inflation, and FX derivative modeling
- » Best-of-breed market-consistent fits to the widest range of data points across interest rate curves, credit spread curves, and other implied volatility surfaces
- » Powerful built-in query tool which can extract simulation output and generate dozens of charts and summary views
- » Optional upgrade to FIRM® Portfolio Analyzer allows full cash flow modelling, including asset rebalancing based on complex trading rules, to provide insight into portfolio-level returns and value-at-risk

Conning Allocation Optimizer™

Available as an option for all our software platforms, the Conning Allocation Optimizer™ is a fully integrated, risk/reward, efficient-frontier optimization application. It assists you in performing Strategic Asset Allocations to balance your financial goals relative to your risk appetite, taking into account any combination of assets, liabilities, and capital, from either an asset-based or full-enterprise perspective.

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About Conning

Conning (www.conning.com) is a leading investment management firm with a long history of serving the insurance industry. Conning supports institutional investors, including insurers and pension plans, with investment solutions, risk modeling software, and industry research. Conning's risk management software platform provides deeper insights for decision making, regulatory and rating agency compliance, strategic asset allocation, and capital management. Founded in 1912, Conning has investment centers in Asia, Europe and North America.

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