

# GEMS® Economic Scenario Generator

RISK SOLUTIONS | PRODUCT SHEET

The economic scenario generator (ESG) is a business-critical tool that enables financial services companies to model possible 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. Such an analysis permits the development of a detailed understanding of the risks a firm faces, as well as an understanding of the relationship between those risks and the potential rewards in retaining them.

**Conning's GEMS® Economic Scenario Generator is an award-winning\*, state-of-the-art stochastic economic scenario generator that uses leading-edge economic models and which provides full market risk and asset class coverage, including alternative assets and derivatives.**

## Technologically Advanced

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 be readily added through built-in system functionality. Additionally, the modeled correlation between variables within GEMS® means that its simulations are credible within economies, across economies, and over multiple time horizons.

GEMS® is also distinguished by its ability to credibly simulate **realistic tail risk events** due to the structure of the stochastic models employed and because of the long historical time periods used to calibrate the models. Our historical database includes highly stressed environments such as 1929, 1987, 1998 and 2008, so our calibrations are capable of reproducing such environments and even more extreme scenarios. Conning's expert quantitative finance team works with industry and academic leaders to produce financial models that are among the most technologically advanced in the industry.

## Supports a Wide Range of Applications

- » Economic capital modeling and stress testing for Solvency II, NAIC ORSA, and rating agency reviews
- » Market-consistent embedded value reporting
- » Capital allocation
- » Performance management
- » Product design
- » Business planning
- » Hedging strategies
- » Mergers and acquisitions
- » Enables management to shape the risk profile of the firm to suit its risk appetite

## Learn More

Can your business afford to operate without a modern risk management approach? Learn how GEMS® can help for better decision making, risk management, and added business growth.

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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

## Flexibility and Customization

Real-world scenario parameterizations are provided through our quarterly GEMS® Service. Additionally, a **full range of calibration and target parameterization tools** are offered for customization of users' own views of the economy within the cascade structure of the GEMS® models and for additional analyses such as stress testing.

## Integration and Transparency

GEMS® will integrate with your existing risk management and actuarial valuation platforms to become a part of your overall ERM platform. This interoperability allows users to apply **consistent assumptions** in their risk modeling and decision-making across the enterprise.

Conning supports GEMS® with unmatched practical and theoretical expertise in quantitative finance, econometrics, and estimation techniques. A comprehensive documentation library featuring user guides, model documentation, applications, techniques, technical briefs, and validation reports provides transparency for understanding and validation by both management and regulators.

## GEMS® is Distinguished By:

- » Ability to model asset prices and cash flows at the security level
- » 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 rating transitions, defaults, and recoveries
- » Sovereign debt default structures
- » Inflation model that permits modeling of inflation derivatives and inflation-linked bonds with embedded caps and floors
- » FX model which provides consistent inter-economy behavior
- » Comprehensive interest rate, equity, credit, inflation, and FX derivative modeling
- » Wide range of standard asset classes and market indices, along with the flexibility to create customized asset classes
- » Best-of-breed market-consistent fits to the widest range of data points across interest rate curves, credit spread curves, and derivative surfaces
- » Realistic real-world tail events
- » Transparency and access to a comprehensive documents library
- » Powerful built-in analytics and reporting

## Financial Instruments

Equity Indices

Treasury Securities

Defaultable Sovereigns

Inflation Linked Bonds (TIPS)

State General Obligation Bonds

Corporate Bonds

Agency Mortgage Backed Securities

Agency Collateralized Mortgage Obligations

Standard Market Indices

Custom Market Indices (optional)

Asset Aggregation

Individual Securities

Asset Classes

## Investment Optimizer

Available as an option for all our software platforms, Investment 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.

## About Conning

Conning ([www.conning.com](http://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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