Scenario Modeling for Asset Managers

Designed for the specific requirements of asset managers who manage institutional assets and multi-asset portfolios for insurance, pensions, or wealth management propositions, our suite of scenario-based asset and liability modeling solutions is powered by the Economic Scenario Generator (ESG). It provides asset managers with the solution for a wide range of investment design and risk management activities.

THE CHALLENGE: ALIGNING INVESTMENT SOLUTIONS WITH CLIENT LIABILITIES AND RISK PROFILE

Driven by regulators, rating agencies, or a demand for best practices in investment solution design, asset allocation, and risk management, asset managers are facing an ever greater requirement for modeling capabilities. They need scenario models that are sophisticated enough to capture the risk and return factors underlying their asset portfolios and associated with client liabilities.

Asset managers must also be able to adapt their models, by configuring them to their own economic views, capital market assumptions, and portfolio constituents. They must use a robust, validated risk modeling framework, where major assumptions driving investment solution design and advice can be communicated transparently to investors and regulators.
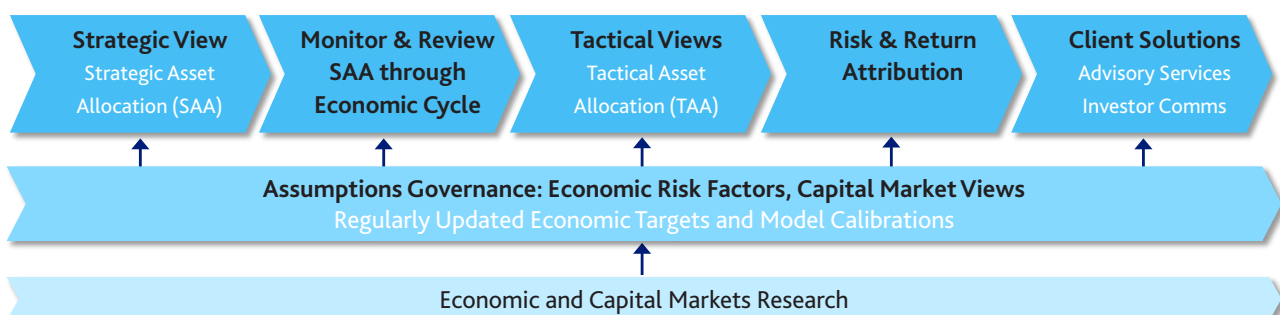
Asset managers and advisors are using scenario models to exploit their specialist investment expertise across a wider range of complex multi-factor risk management problems.

The Solution: Economic Scenario Modeling for Portfolio Design and ALM

Our suite of analytic solutions is built around our economic research and scenario modeling capabilities. It enables asset managers to build better investment solutions, where the measurement and management of risk depends on client-specific cash flows and liabilities. A flexible modeling framework provides coverage of a comprehensive range of assets, client liabilities, and risk management strategies.

Modeling options allow our clients complete control and transparency in the economic assumptions embedded in their investment process, by blending their own in-house economic views onto Moody's Analytics fully documented "best views" model calibrations.

Our modeling framework supports all elements of the investment process. Allowing our clients to exploit their specialist investment expertise consistently throughout the investment design and advisory process.

Strategic View	Monitor & Review	Tactical Views	Risk & Return	Client Solutions
Strategic Asset Allocation (SAA)	SAA through Economic Cycle	Tactical Asset Allocation (TAA)	Attribution	Advisory Services Investor Comms

Assumptions Governance: Economic Risk Factors, Capital Market Views
Regularly Updated Economic Targets and Model Calibrations

Economic and Capital Markets Research

Scenario Modeling for Asset Managers

Reduce Operational Risk: An Award-Winning Risk Modeling Platform

The investment required to build and maintain scenario models in-house is substantial, and can increase operational risk in the form of key-man dependencies. Using our scenario modeling solutions, asset managers can be up and running in a fraction of the time that it would take to build models in-house. Implementation of our scenario modeling solution enables asset managers to reduce development and maintenance costs, with access to Moody's Analytics expertise when required.

Moody's Analytics employs a large team of technical specialists dedicated to the research & development, maintenance, and regular recalibration of our models. We are strategically committed to economic scenario modeling as the core component of our value proposition.

Modular Solution: Easy Integration into Client Investment Process

We have designed our modeling solutions on a flexible, modular basis, to allow rapid integration within our clients' existing investment process. Clients license modeling software and content that fits with their investment process, allowing them to exploit their own in-house investment modeling expertise.

By integrating Moody's award-winning economic scenario modeling platform, our clients can focus their resources in areas of specialist expertise, where they create the most value. Our modeling solutions are designed to enhance existing in-house specialist expertise.

Assumptions Governance: Economic and Capital Market Views

Regulators, advisors, and investors are demanding robust and transparent governance of the investment process. They particularly focus on the economic and market assumptions, which must be fully justified and documented. Asset managers must ensure economic and capital market assumptions are applied consistently across different clients, markets, and business functions.

Moody's Analytics economic research team maintains a comprehensive and fully documented set of "best views" economic and capital market assumptions, covering the complete range of risk factors, economies, and asset classes. Our modeling solutions provide the framework for our clients to fit our models to their own in-house views, and to supplement them with Moody's Analytics fully documented "best views" economic targets and model calibrations.

Thought-Leadership: Applying Scenario Modeling to Asset Management Problems

Our modeling solutions form the intelligence inside for a wide range of asset management activities: economic data analytics and target setting, strategic asset allocation, portfolio construction and optimization, liability-driven investment and asset-liability modeling, advisory services and investor communications.

We have many years of practical experience of developing and configuring solutions for a wide range of clients from the largest global asset managers to small advisory firms. Our research and advisory services teams work closely with our clients to help them embed our scenario modeling capability into their own business.

Our scenario modeling solutions are widely used within the insurance, pensions advisory and wealth management sectors. This experience is increasingly vital as asset managers develop closer vertically integrated models with a range of distribution partners.

# Scenario Modeling for Asset Managers

Supporting the Investment Process

Investment professionals benefit from being able to:

» Project assets, portfolios, and investment strategies over multiple time-steps.

» Model assets and liabilities: project investment strategy alongside client cash flows and liabilities.

» Capture all financial risks in investment solution design: interest rates, inflation, FX, volatility.

» Comprehensive asset class coverage: including fixed income, credit, equity, property, and alternatives.

» Support more reliable asset allocation and portfolio construction.

» Evaluate risk metrics which relate directly to client needs: CVaR, maximum loss, risk of ruin, funding ratio, solvency capital requirement.

» Decomposition of risk and return into underlying assets and economic risk factors.

» Assess impact of variations in economic views, asset exposures, asset allocation, risk budgets.

» Perform stress testing, including access to Moody's Analytics economic stress scenarios.

» Manage and validate in-house economic and capital market assumptions.

Investment Advisory Solutions

» Design and test the effectiveness of hedging and de-risking strategies for defined benefit pension funds, using a comprehensive array of dynamic rebalancing triggers and derivative instruments including LPI swaps.

» Measure and communicate the impact of new investment strategies or alternative asset exposures (for example, diversified growth, absolute return, loans, infrastructure) on Solvency risks and capital requirements for insurance liabilities.

» Investment design, governance and communication for wealth management, retail investment and retirement income: risk-graded and target date funds, guarantees, CPPI, diversified growth.
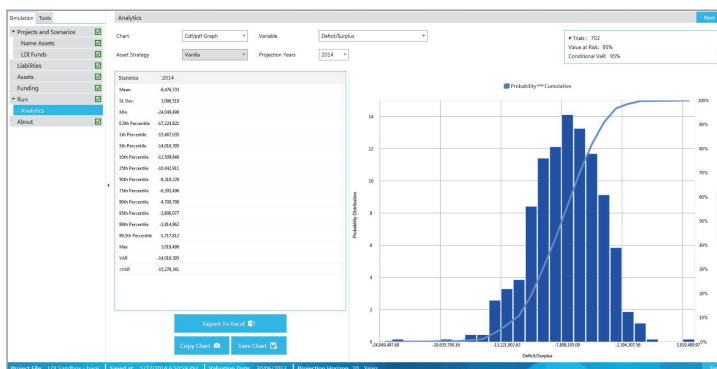
Asset and Modeling Coverage

The ESG can project a wide range of assets and economic risk factors, including:

» Equity indices.

» Nominal and real interest rates.

» Nominal and index-linked bonds.

» Inflation (RPI, CPI, wages, medical costs, and others).

» Exchange rates.

» Real estate.

» Alternative assets (hedge, PE, commodities, infrastructure).

» Credit spreads and credit risky bonds.

» Municipal bonds.

» Structured products (MBS).

» Derivatives (options, swaps, swaptions, forwards).

» Implied volatilities.

» Multi-asset portfolios (with a range of rebalancing options).

A range of models options are included for the major risks and asset types. Clients can choose the best model for their requirements and their sophistication level.

Economic Views and Calibration Services

Any scenario generator is only as good as its calibration—the setting of justified economic and capital market assumptions, and the parameterization of its models. We provide a comprehensive calibration service covering a wide range of economies and asset classes. Our calibrations include:

» **Real-World Best Views Calibrations**: real-world calibrations that reflect our best view of the realistic evolution of risk factor distribution over horizons to around 50 years. They are ideal for many applications including; run-off capital, cash-flow projections, and illustrating policy outcomes.

» **Real-World Dynamic Equilibrium Calibrations**: real-world calibrations that reflect a stable or equilibrium view of asset risk premiums. They are ideal for use in portfolio construction and strategic asset allocation work.

In addition to these services, we provide a suite of calibration tools allowing users to customize their calibration, impose their own views or apply stress and sensitivity calibrations. We also offer a bespoke calibration service where we provide alternative calibrations directly to the users.

Comprehensive Documentation

We provide comprehensive documentation of our models and calibrations. These documents are available to users via our online Client Service website. The documents typically fall into the following categories:

» **Calibration reports**: provide validations of a calibration and summary model and calibration methodology information.

» **Model methods**: provide detailed description of the model including model and pricing equations and derivations.

» **Calibration methods**: describe the calibration method, including approach to analyze data for target development.

» **Assumption updates**: contain the latest updates to assumptions and calibration targets.

» **Policy and compliance documents**: describe our approach to data selection and calibration validation.

About Moody's Analytics

Moody's Analytics, a unit of Moody's Corporation, helps capital markets and credit risk management professionals worldwide respond to an evolving marketplace with confidence. The company offers unique tools and best practices for measuring and managing risk through expertise and experience in credit analysis, economic research and financial risk management. By offering leading-edge software and advisory services, as well as the proprietary credit research produced by Moody's Investors Service, Moody's Analytics integrates and customizes its offerings to address specific business challenges.

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