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OutRank

Economic Scenario Generator

We empower decision-making

There is no doubt that adequate estimation of risks is crucial in enabling financial institutions to provide high quality services to their customers. It is a critical element of numerous functions within banking and insurance businesses such as those engaged in asset and liability management (ALM) or risk management activities. In this context, detailed analysis of possible economic outcomes is necessary to create a comprehensive understanding and efficient management of risk exposures.

Kidbrooke's OutRank Economic Scenario Generator is a Software as a Service (SaaS) solution that enables financial institutions to model possible future states of the global economy and capital markets to empower a wide range of portfolio and risk management decisions. The solution allows for covering a rich variety of economies and asset classes and also enables users to impose house views on asset return behavior and risk distributions.

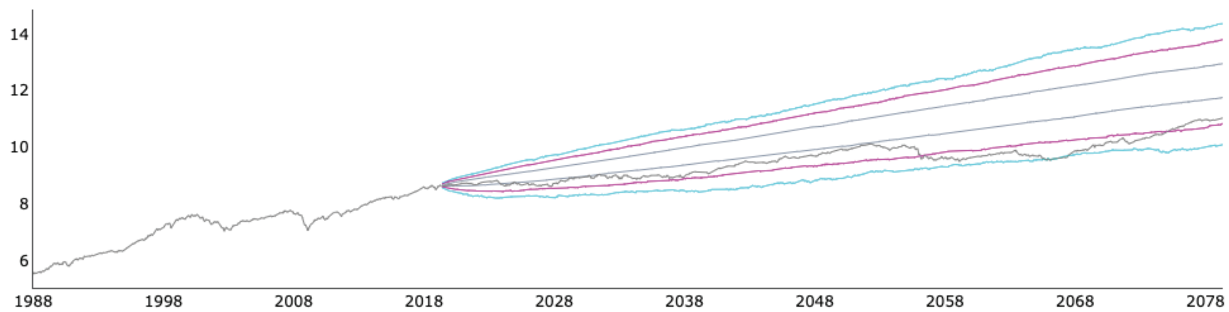

Exhibit 1. The plotted lines represent **the time series of historical data** to which the model has been calibrated as well as **the simulated scenarios**. Each point on the graph corresponds to a date and a value.
Specifically, starting from left to right, the historical data is plotted as a single line and thereafter the graph shows the percentiles of the simulated probability distributions as well as one specific simulated scenario.
The **x axis** shows the years from right to left starting with the first historical observation and ending with the year of the last simulated value. The **y axis** represents the values of the historical and simulated time series. In this specific graph the y axis shows the log scale of historical as well as simulated large-cap US equities.

Kidbrooke is a tech company specialising in building applications dedicated to improving decision-making processes in the financial services industry and beyond. Our roots as both risk and technology consultants enable us to recognise the value of applying modern tools and methods to risk management activities with the goal to drive transformative change to business models within finance. This experience inspired us to build software which empowers our customers to complement the evaluation of the defining financial decisions with an appropriate treatment of risk.

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Features and Capabilities

The OutRank Economic Scenario Generator (OutRank ESG) allows you to fully automate the scenario generation process, from model calibration to scenario simulation and validation. The OutRank ESG facilitates many use cases, including:

- Capital requirements modeling and stress testing under Solvency II and other regulations;
- Capital allocation and asset management;
- Risk management;
- Product design and business planning:
- Independent validation of economic scenario generators from other vendors.

Real-world scenarios tried and tested by the industry

Our solution empowers risk management processes within a number of financial institutions in Sweden, ranging from mortgage credit risk losses to advice related to pension accumulation.

Flexibility in incorporation of house views

OutRank Economic Scenario Generator allows our customers to gauge their risks accurately by providing the possibility to easily adjust the calibration to their house views.

Leading-edge solution at a reasonable price point

Our combined background from risk and technology has allowed us to build a world class solution with leading performance scalability at a very attractive price.

Key Features

Our team of experienced quantitative experts utilises the latest technological advancements to create high quality and reliable financial models.

The OutRank ESG captures the following features:

- term structures of risk, return and dependence including dependence between driving factors like volatility and returns;
- asymmetry between gains and losses;
- tail dependence, allowing for more realistic behavior;
- volatility clustering in time; and
- term structure of house views for more consistent benchmarking.

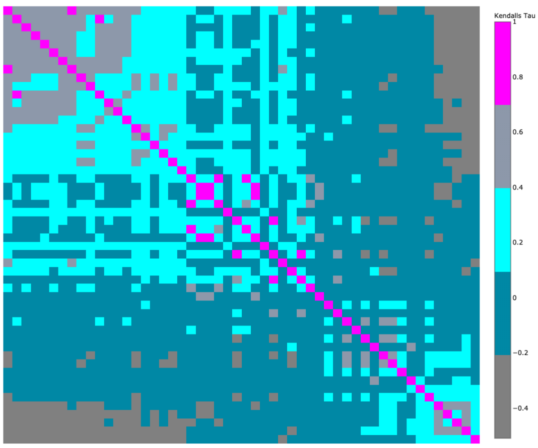

Exhibit 2. The heatmap shows the **excess tail dependence of the model** as defined by the difference in Conditional Quantile Exceedance (CQE) of the model as compared to a Gaussian copula with the same linear correlation. Specifically each colour as given by the colour bar on the right corresponds to an interval to which each estimated difference in CQE belong.
Both the **x axis** and the **y axis** correspond to all simulated risk factors grouped according to the magnitude of the dependence relative to all other risk factors.

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Implementation

Easy integration

OutRank Economic Scenario Generator can be easily integrated into your risk pipeline through the versatile API. Alternatively, you may access the generated scenarios and pre-built supporting analytics through our Report Viewer Web Application.

Customisation & Calibration of Risk Factors

We provide an opportunity to calibrate risk factors to customer-specific data as well as an option to tweak the existing calibration of the ESG-model to align it with your respective house views. Bespoke calibration can be provided on a managed service basis or may be done using our self-service tools.

Validation Toolbox

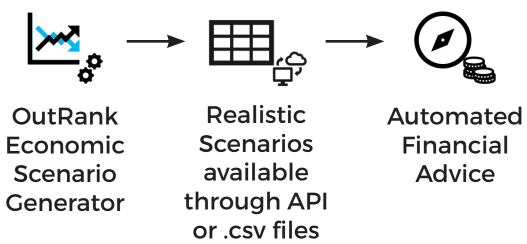
The OutRank ESG comes with a detailed and dynamic validation report, allowing you to quickly get a firm grasp of the quality and reliability of the scenarios empowering your offerings. Moreover, our economic scenario generator may be used as a benchmarking tool for independent validation of scenarios provided by other vendors.

24/7 Technical Support

We monitor and support our solution around the clock ensuring that the analytics powering your risk pipelines meet the highest standards of quality, efficiency and reliability.

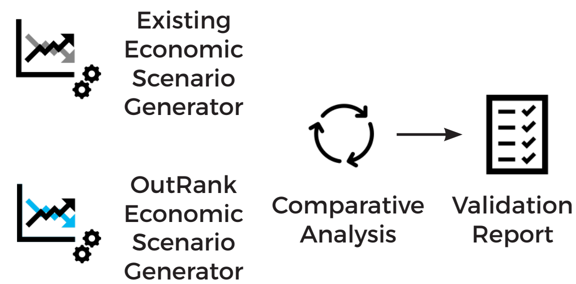
Use Cases

Empowering Automated Financial Advice



We built the OutRank Economic Scenario Generator to power other applications in the domain of the financial industry. For instance, it is a crucial component driving our automated financial planning offering. Currently, our economic scenario generator is driving the self-service digital pension planning tools of one of the largest life-insurance companies in Sweden. The incumbent insurer has begun a transformative project of digitalising its wealth management offerings to improve customer engagement, increase inclusion and achieve a very competitive business model. Automation of their financial advice processes is anticipated to result in a 5x reduction in operational expenditures.

Driving Independent Model Validation



Since scenario analysis often underpins important financial decisions potentially impacting the financial situations of millions of end-customers, the consequences of getting the calculations wrong could be severe. While we are able to provide a validation toolbox with functionality allowing for stress-testing and sensitivity analysis, we take it a step further by developing capabilities for independent validation of scenarios. This process enables the comparison of the scenarios generated by other vendors to the OutRank ESG, which would provide an additional point of reference to ensuring the resilience of your offering. Currently, we are running regular validation processes for two large Swedish customers.

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Contact us

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