Dynamic Firm Analysis

Challenge:
Find the optimal dynamic asset strategy in the context of ongoing business.

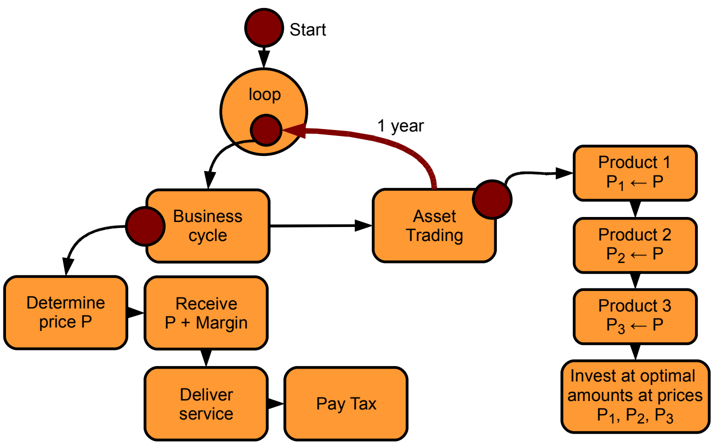
Customer:
A reinsurance company

Solution:
One of the unique features of the Theta Suite software is the ability to model and analyze investment decisions from a top level perspective. In the case described here it was important that the model could be documented precisely. Designing the model in ThetaML made the complexity accessible and allowed various experts in specific fields to contribute to the model.

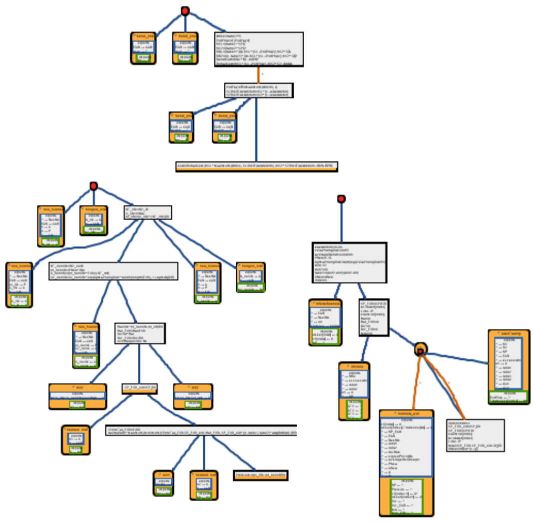
The focus of the analysis was the optimal ratio of investments in three different asset classes. Thus it was important to model the relevant aspects of the company's ongoing business. Obtaining an understandable model was more important than covering every aspect in great detail. Some simplifications had to be applied to the models for insurance loss distributions, customer behavior and business cycles.

The Theta Suite offered a unique environment to model and visualize the firm model made for the insurance company. The algorithmic speed of the generated code allowed a verification of the model under a large number of market scenarios. The optimized investment strategy could be derived through a numeric optimization of a target utility function. The insights created by these analyses lead to a new understanding of the impact of asset trading on the company's overall risk-reward profile.

Simplified business model



Main components of the production model represented as Thetagram (details are undisclosed)



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