

# StructureTool

## Flexibility for Financial Risk Professionals

### Product Description

StructureTool is a simulation based tool designed to allow users to efficiently compute values and hedge statistics of user defined exotic and structured products. StructureTool allows users to specify arbitrary payoffs to value everything from plain vanilla options and bonds to complex structured products such as equity linked notes, interest-rate "snowballs", exotic basket options, complex trigger options, Asian barrier options, and target return notes. It covers many asset classes, including equities, commodities, foreign exchange, and interest rates. Path-dependent and early-exercise conditions can also be specified by the user. StructureTool is available as a Microsoft Excel Add-in and as a library to allow integration into custom and third party applications.

### What Makes StructureTool Unique

- Values complex, user-defined structures on a virtually unlimited range of asset types and contract terms.
- Uses an efficient implementation focused on run-time performance.
- Includes an expanding library of sample-contract templates for quick customization.
- Takes advantage of an open architecture that allows examination of all intermediate results. This makes strong model auditing possible, greatly speeds up the building of new contract templates, and gives a transparent view of how a contract works.
- Exports the debugging and modeling work performed in Excel into a library-based production valuation environment. StructureTool will write the C code to allow the user to value a contract once the user has specified it in Excel.

### Key Features

- Handles multiple underlying types of assets. General examples include equity, commodity, currency, and interest rates.
- Handles multiple-price processes based on standard market models: log-normal and normal, with and without mean reversion, and market-based models including the Libor Market Model.
- Simulates up to 128 correlated underlyings with term structures of volatility and correlation.
- Allows the user to specify asset price curves in multiple formats: forward prices, spot price with yields.

Figure 1

Examine the payoff distributions of complex derivative instruments



### Key Features (continued)

- Contract features include, for example: Early exercise, including Bermuda and American options, path dependent, including Asians, lookbacks, and barriers, and quanto features, and optimization over flow volumes.
- Users can combine multiple instruments into a single valuation for aggregated price and risk measures.

### Software Architecture

StructureTool is a Microsoft Excel® Add-In that is completely written in C/C++ providing extremely fast calculations. It includes Excel Add-In functions (xll files), customizable Excel templates, and comprehensive documentation. When installed, the StructureTool xlls add functions to Excel that can be used like the built-in Excel worksheet functions, allowing users to customize the existing templates or create new ones. StructureTool is also available as a library for Unix and Windows programmers who want to incorporate its functions into custom and third-party C, C++, Visual Basic, and SQL database applications.

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### About FEA

Focusing on the energy, financial, and commodities markets since 1989, Financial Engineering Associates, Inc., an MSCI Barra company, is a leader in the development of financial derivatives valuation models and portfolio risk management software. Powered by innovation and excellent technical support, FEA has established leadership in developing a broad range of energy derivatives analytics and works closely with clients to adapt pricing models to changing market conditions. FEA leverages a network of selected system vendors and value-added distributors. FEA software systems are used by more than 250 institutional clients that include energy firms, money center banks, Fortune 500 companies, trading enterprises, and leading financial firms.



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