

## DESCRIPTION

@GLOBAL is a set of Microsoft<sup>®</sup> Excel add-in functions that values derivative instruments used in the currency and commodity markets, including foreign exchange, metals, agricultural commodities, and broad-based stock indices. Typical users are corporations, investment funds, financial institutions, insurance companies, and commodity firms.

@GLOBAL is written in C and provides extremely fast calculations. It includes Excel add-in functions (XLL files), customizable Excel templates, and documentation. When installed, @GLOBAL adds functions to Excel that are used like the built-in worksheet functions, so you can customize the @GLOBAL templates or create new ones.

@GLOBAL is also available as the GlobLib<sup>™</sup> C library for Unix and Windows programmers who want to incorporate @GLOBAL functions into custom and third-party C, C++, Visual Basic, and SQL database applications.

## FEATURES

**Extensive Instrument Coverage:** The supported set of instruments (see Coverage) can be extended by combining and chaining functions to value complex transactions.

@GLOBAL includes templates for specialized trades such as spark spreads. FEA regularly expands instrument coverage and publishes new spreadsheet templates.

**Cross-commodity Models:** @GLOBAL functions include domestic models which support a single global commodity against a base currency (for example, the exchange of USD for gold by a U.S.-based investor). Many domestic models have cross-commodity counterparts, which support a base currency and two different global commodities not involving the base currency (for example, the exchange of GBP for gold by a U.S.-based investor).

**Comprehensive Results:** All price and risk measures can be calculated with a single function call. Results include fair value and sensitivity with respect to price (delta and gamma), volatility (vega), time (theta and carry), yield (lambda), interest rate (rho), and correlation (eta). Both buy-side and sell-side risk measures are calculated for cross-commodity models.

**Implied Volatility and Implied Correlation:** @GLOBAL calculates implied volatility for single-asset options and implied correlation for multiple-asset options.

**Quanto Options:** @GLOBAL values domestic and cross-commodity quanto options, which give a fixed-rate guarantee of the option's value in an alternative currency. A quanto option has all the characteristics of a standard option plus the additional feature of paying off at a fixed conversion factor of currency. For example, a GBP-denominated option on gold, paying in USD, with a fixed GBP/USD exchange rate. @GLOBAL also values foreign-domestic quanto options, which are similar to standard quantos except the exchange rate is not fixed and the strike is set in units of the underlying accounting currency.

**Analytic and Monte Carlo Methodologies:** Basket options are valued with either FEAs extremely fast analytic SPAV algorithm or control-variate Monte Carlo simulation.

## COVERAGE

@GLOBAL contains five independent modules. The first module, @GLOBAL.1, values common exchange-traded and over-the-counter derivatives:

- Flows, forwards, and futures
- European, American, and Bermuda options
- Complex chooser options
- Installment options
- Swaps and swaptions

## Pricing, hedging, and risk management for currency and agricultural commodity markets

### COVERAGE (continued)

@GLOBAL.2 values exotic options:

- Average-price options (continuous and discrete)
- Average-strike options (continuous and discrete)
- Double-Asian options
- Lookback options
- Fixed-strike lookback options
- Shout and whisper options
- Cliquet options

@GLOBAL.3 values dual-asset and compound options:

- Dual-commodity options
- Contingent options
- Two-factor barrier options
- Compound options

@GLOBAL.4 values barrier and digital options:

- Knockout and reverse knockout options
- Digital asset knockout and reverse digital asset knockout options
- Digital cash knockout and reverse digital cash knockout options
- Window knockout and reverse window knockout options
- Kick-in options and reverse kick-in options
- Digital asset kick-in and reverse digital asset kick-in options
- Digital cash kick-in and reverse digital cash kick-in options
- Window kick-in and reverse window kick-in options
- Corridor knockout options
- Digital asset corridor knockout options
- Digital cash corridor knockout options
- Window corridor knockout options
- Soft (proportional) knockout options
- Ladder options
- Digital and double-digital options (cash-or-nothing)
- Digital and double-digital options (asset-or-nothing)
- Window digital options (cash-or-nothing)
- Soft (proportional) digital options

@GLOBAL.5 values average price and basket option (SPAV):

- Average-price options (discrete, one asset)
- Average-strike options (discrete, one asset)
- Double-Asian options (discrete, one asset)
- Spread average-price options (discrete, two assets)
- Spread average-strike options (discrete, two assets)
- Crack options (three assets)
- Basket options (up to 32 assets)
- Basket average-price options (up to 32 assets)
- Best of 2 or 3 assets
- Complex multi-asset average-price options with cliquet and quanto features

