# F3 Toolbox for use with MATLAB®

Giving MATLAB Users Access to the Most Powerful Financial Analytics

# THE MOST ADVANCED ANALYTICS PLATFORM

F3 Toolbox gives you access to F3, the most advanced analytics platform commercially available, within the MATLAB® environment. F3's patent-pending architecture offers an unparalleled generic and powerful method for handling any derivatives portfolio or trade, whether vanilla or exotic.

Leverage the power of F3 to significantly reduce development time, simplify integration within your enterprise system, and improve efficiency of your operations.
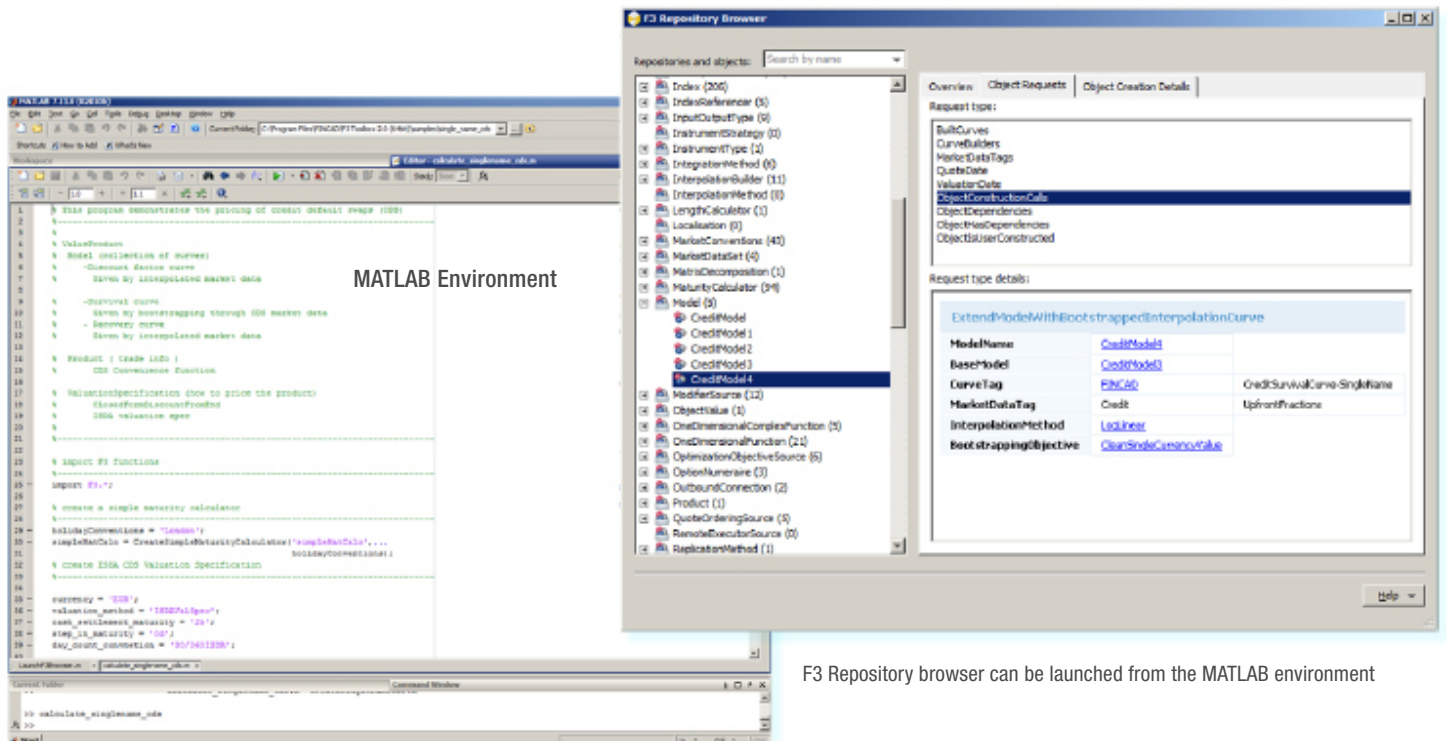
## FLEXIBLE ARCHITECTURE

### Powerful objects you can re-use

F3's award-winning framework offers the industry's most flexible building blocks for derivatives valuations. This stateful, object oriented architecture separates the description of trades and portfolios from the construction of the financial models and valuation method employed.

Any trade or position can be represented in generic terms, and the Monte Carlo simulation to calculate value and exposure is automatically constructed on-the-fly. Modeling approaches are also completely customizable with pre-built options available, offering great flexibility in how you choose to set up your model:

- ♦ Generic bootstrapping and calibration framework
- ♦ Customizable Monte Carlo generator framework
- ♦ Payoff scripting to simplify payoff calculations
- ♦ Fine-grained control and manipulation of dates and schedules for any market data convention

With F3 Toolbox, you can save a significant amount of development time and resources by reusing pre-built or user-defined objects to value any new portfolio or trade from simple vanilla derivatives, all the way to the most complicated long dated range accruals, PRDCs and hybrids without starting from scratch.

MATLAB Environment

F3 Repository browser can be launched from the MATLAB environment
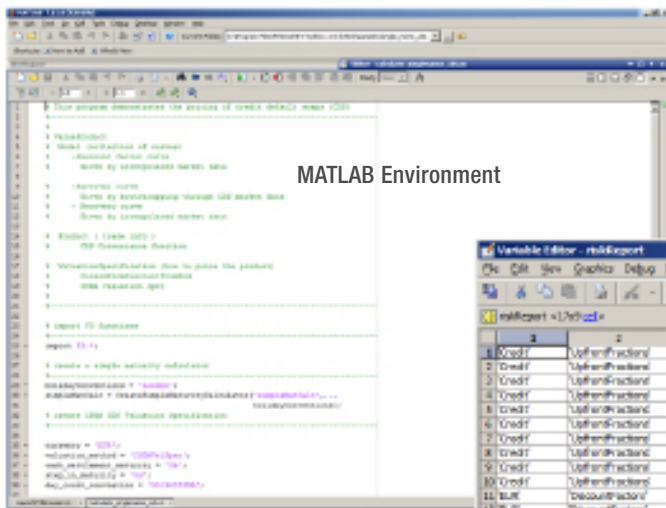
## ENTERPRISE READY

### Seamless integration between platforms

F3 Toolbox is equipped with enterprise-ready architecture that uses common data models (CDM), an accepted best practice to facilitate data integration across different platforms. It has never been simpler to integrate your MATLAB calculations seamlessly into Excel, C#, C++, or Java-based systems.
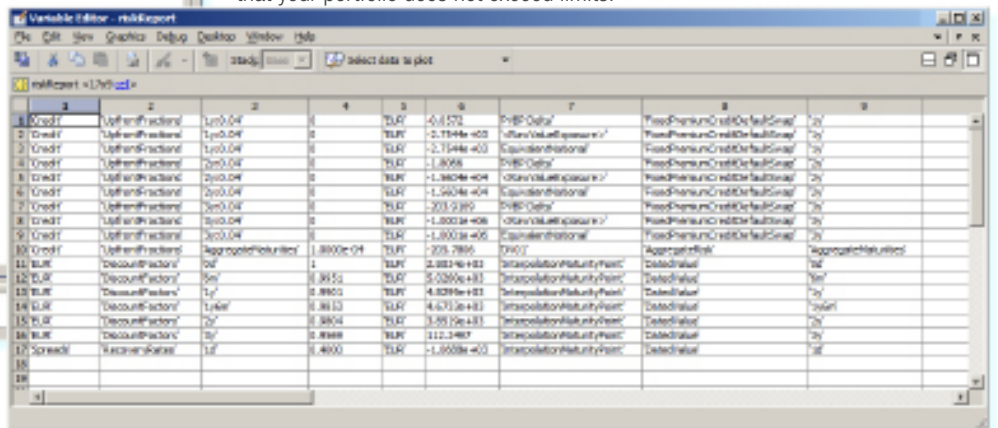
## PORTFOLIO-LEVEL ANALYSIS

### Comprehensive portfolio risk available when you need it

F3 Toolbox provides on-demand comprehensive risk reporting, so you can react when the market does. F3's architecture offers significant improvements in computational efficiency with its propietary Universal Algorithmic Differentiation™ to calculate first-order sensitivities without "bumping". In F3, all of the risk information is available, all the time.



MATLAB Environment

Leverage F3 to quickly assess how a new trade or position will affect the risk of your entire portfolio, calculate CVA (collateralized & uncollateralized) and VaR, or conduct stress testing to identify areas of greatest risk within your portfolio. Access risk information for all market data quotes that each trade or portfolio depends on, including volatilities, initial values, and discount rates. With F3 Toolbox, you can easily verify that your portfolio does not exceed limits.

F3 Risk report can be launched from the MATLAB environment

## P&L AND PERFORMANCE ATTRIBUTION

### Eliminate time-consuming reconciliation

With F3 you can view all exposures and valuation components in isolation, as well as at the aggregate level, providing a comprehensive attribution. Avoid lengthy reconciliation by having the pricing and P&L reporting all on the same system. In addition, with F3's Performance Attribution, you can see how your portfolio measures up against benchmarks and identify areas to adjust for greater returns.

## FULLY TRANSPARENT

### Not a black box solution

F3 Toolbox adds value to your analytics system with full documentation that explains the math behind each function and valuation, so you never have to spend time second guessing or re-calculating work that has already been done.

F3 toolbox also offers the flexibility to extract any parameter from your model, so you can verify interim calculations as needed.

"F3 Toolbox for use with MATLAB is a very powerful tool. The creation of all objects can be done once and simply adjusted if needed. I definitely like the idea of the function call log and its compatibility across languages/environments…this will be extremely useful to us.

**Michal Kabata, Analyst, Bunge**

## FINCAD: The Future of Financial Analytics

Founded in 1990, FINCAD provides advanced modelling solutions built on award-winning, patent pending technology. With more than 4,000 clients in over 80 countries around the world, FINCAD is the leading provider of financial analytics technology, enabling global market participants to make informed hedging and investment decisions. FINCAD provides software and services supporting the valuation, reporting and risk management of derivatives and fixed income portfolios to banks, corporate treasuries, hedge funds, asset management firms, audit firms, and governments. FINCAD Analytics can be accessed through Excel, MATLAB, as a Software-as-a-Service or embedded into an existing system through software development kits. Now, over 70 FINCAD Alliance Partners embed FINCAD Analytics within their solutions. FINCAD provides sales and client services from Dublin, Ireland, and Vancouver, Canada.

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