FinE

What is FinE?

- A comprehensive set of advanced financial functions covering all aspects of risk management, valuation and analysis.
- A financial framework offering centralized, fast and robust calculations.
- A financial engine with a fully featured .NET interface for easy integration with almost any other customer application.
- Database independent and easily integrates with almost any choice of database holding market data.
- Comes with a powerful and flexible Microsoft Excel interface offering maximum freedom for the day-2-day working risk manager or analyst.
- Self-explanatory and comes with more than 1000 descriptive help pages, full of examples for easy interactive use.

Why use FinE?

- Quality, consistency and accuracy with respect to financial calculations.
- Flexibility, scalability and easy integration with respect to development.

What is the future bringing (under development)?

- Distributed financial computing - an unmatched ultra fast, distributed engine designed for large-scale calculations across grids of computers. *Have you ever wanted to use your company's huge amount of computers instead of one server struggling to execute a large batch job?*

FINE ANALYTICS

FinE

Financial Instrument and Methodology Coverage

Dates
- 19 Calendar Conventions
- Built-in Holiday Calendars
- The ability to Customize Holiday Calendars

Fixed Income
- Bonds
- Jurisdictional specific models (27 countries)
- T-bills
- Zero-coupon Bonds
- Amortizing Bonds
- Bond Forwards and Futures
- Specify your own Bond using Taylor made functions
- Pricing and Accrued Interest calculations
- Risk Measures – including: Imp. Yield Spread, Modified Duration and WAL
- Yield calculations – including:
  - Redemption Yield and Japanese Yield
- Cash flow generator
- Cost-Of-Carry analysis
- Barbell Strategies
- Delta-Vectors

Mortgage Backed Bonds
- Treat MBBs as straight bonds
- Highly flexible pricing engine for MBBs
  - Include CK93
  - User defined CPR/SQM
  - User defined CK92
  - Any Yield-Curve model from One-Factor Lattice can be used
- Specify your own MBB using Taylor made functions
- Define your own prepayment model
- Cash flow generator
- Risk Measures – including:
  - Imp. OAS Spread and OAS adjusted Duration
- Yield calculations – including:
  - Redemption Yield
- Delta-Vectors
- Calculation of refinancing profit

Debt
- Advanced payment structures – including for example Step-Up Coupon structures and variable amortization schedules
- Pricing
- Cash flow generator

HPR
- Flexible and powerful generic HPR module
- Include MBB prepayment model forecast in the calculation
- User defined prepayment schedule
- Work with multiple Yield-Curves
- Control OAS/NPV evolution

Bond-Options
- Models: Black76, CIR Deterministic Shifts, Ho-Lee, Hull-White, Quadratic
- Price, Volatility
- Implicit Strike and Volatility

Swaps
- Basis Swaps
- Amortizing Swaps and Rollercoaster Swaps
- Compounding Swaps
- Libor-In-Arrears and CMS/CMT
- Power Swaps
- Average Rate Swaps
- General mismatch Swaps
- Interest Rate Swaps and Cross Currency Swaps
- Equity and Commodity Swaps
- Par Swap Analysis and calculation of Libor-Spreads and Swap-Rates
- Delta-Vectors
- Cash flow generator

Swaptions
- Models: Black76, CIR Deterministic Shifts, Ho-Lee, Hull-White
- Price, Volatility
- Implicit Strike and Volatility
- Estimating model parameters using Swaptions Market Data

Caps & Floors
- Models: Black76, CIR Deterministic Shifts, Ho-Lee, Hull-White
- Price, Volatility
- Implicit Strike and Volatility
- Estimating model parameters using Caps/Floors Market Data

Termstructure
- Estimate the Bond/MBB/Credit Yield-Curve
- Estimate the Swap Yield-Curve – include:
  - Deposits, FRA's, Futures, Swaps
- Shift the Yield-Curve using Key-Rate Shifts, Bucket Shifts or Twists
- Tools for Yield-Curve interpolation
- Build the Yield-Curve using your favorite Yield-Curve model:
  - Hull-White, Ho-Lee, CIR, CIR Extended, Quadratic, CIR Deterministic Shift, Vasicek
- Construct Forward Yield-Curves

One-factor Lattice
- Models: Hull-White, Black-Karisinski, BDT, Quadratic, CIR deterministic Shifts
- European, American or Bermudan
- Instrument coverage: Bond-Options, Swaptions and Cap-Floors
- Pricing and Risk-measures
- Estimating model parameters using Market Data

Monte Carlo
- Simulate models belonging to the MCEV class
- Techniques for matching the initial yield-curve
- Several ways to generate the random numbers - for example Box-Mueller
- Multiple variance reduction techniques available, like for example Brownian
- Bridge and Measure Transformation

BoligX (include RenteMax + RenteDyk™)
- Flexible and fast MC pricing engine with user controls
- Specify you own extended BoligX Bond using tailor-made functions
- Complete control over the fixing rules
- Cash flow generator with optional convexity adjustment
- Yield calculations – including:
  - Redemption Yield
- Risk Measures - including:
  - Imp OAS Spread and Modified Duration
- Delta-Vectors

FlexGaranti
- Flexible and fast MC pricing engine with user controls
- Define your own prepayment model
- Specify you own extended Flex MBB using tailor-made functions
- Complete control over the fixing rules
- Cash flow generator
- Highly flexible pricing engine for Flex MBBs:
  - User defined CPR/SQM
  - User defined CK92
- Yield calculations – including:
  - Redemption Yield
- Risk Measures - including:
  - Imp OAS Spread and OAS Adjusted Duration
- Delta-Vectors

Forwards
- FRAs – pricing and risk measures
- FX Forwards – pricing and risk measures
- Equity and Commodity futures – pricing and risk measures

Correlation
- Linear Correlation
- Rank Correlation
- Correlation assuming a GBM process
- EWMA
- Estimation of the Correlation Matrix given a Target Correlation Matrix

Volatility
- N-period Historic Volatility
- 6 Univariate Garch Models
- Volatility assuming a GBM process
- EWMA
- Garch Volatility forecast

FINE ANALYTICS

FinE

Financial Instrument and Methodology Coverage - Continued

Credit
- Estimation of default probabilities using a variety of methods, for example:
  - Using market prices of credit bonds
  - Using the Transition Matrix
- Transition Matrix tools:
  - Calculating the Transition Matrix for any time-period

Credit Bonds
- Specify your own Credit Bond using Taylor made functions
- Calculation using either the Credit Curve or using the default probabilities
- Cash flow generator
- Yield calculations – including:
  - Redemption Yield
- Risk Measures – including:
  - Imp. OAS Spread and OAS adjusted Duration
- Delta-Vectors

Equity-Options
- Price European options using a variety of models:
  - Black 76, Black-Scholes, Garman-Kohlhagen, Displaced Diffusion, CEV and CRR
- Price American options using a variety of models:
  - Barone-Adesi, Ju-Zhong and CRR
- Powerful and flexible CRR implementation
- Calculation of sensitivity numbers, like for example: Delta and Gamma

FX-Options
- Price European options using a variety of models:
  - Garman-Kohlhagen, Displaced Diffusion, CEV and CRR
- Price American options using a variety of models:
  - Barone-Adesi, Ju-Zhong and CRR
- Powerful and flexible CRR implementation
- Calculation of sensitivity numbers, like for example: Delta and Gamma

Index-Linked Bonds
- Type of Index Bonds include OATs, UK Index-Linked Gilts (IGs), Swedish Index Bonds, TIIS and Danish Index Bonds or similar rules
- Specify you own extended Index Bond using tailor-made functions
- Complete control over the CPI-Data
- Cash flow generator
- Yield calculations – including:
  - Redemption Yield
- Risk Measures - including:
  - Imp OAS Spread and Modified Duration
- Delta-Vectors

Floating-Rate Bonds
- Specify you own extended Floating-Rate Bond using tailor-made functions
- Complete control over the fixing rules
- Fully flexible methods for specifying how to calculate the coupon, this includes for example: Super Coupon
- Cash flow generator
- Yield calculations – including:
  - Redemption Yield
- Risk Measures - including:
  - Imp OAS Spread and Modified Duration
- Delta-Vectors

Inflation Derivatives
- Specify you own extended Inflation Swaps using tailor-made functions – including YoY Inflation Swaps
- Cash-flow generator
- Calculation of Spreads and Fixed Inflation Rates
- Delta-Vectors
- Risk Measures

Principal Component Analysis (PCA)
- Estimating principal factors
- Simultaneously work with 5 different PCA models

CTD Futures
- CTD Futures - pricing and risk measures Cash-flow generator
- Delta-Vectors

Volatility Derivatives
- Specify you own extended Variance/Volatility Swaps using tailor-made functions
- Cash-flow generator
- Delta-Vectors
- Risk Measures and implied calculations

Inflation
- Imply CPI-Curve from IR-Changes and spill-over effect
- Forecast missing CPI-Data using standard ISDA rules
- Etimating CPI-Curves using Inflation Swaps-or Index Bond Data – taken into account seasonality
- Switching between Inflation-Rate curves and CPI-Curves
- Constructing CPI-Curves

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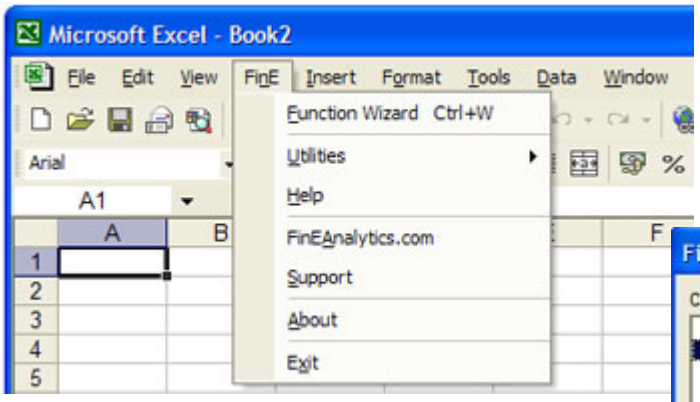
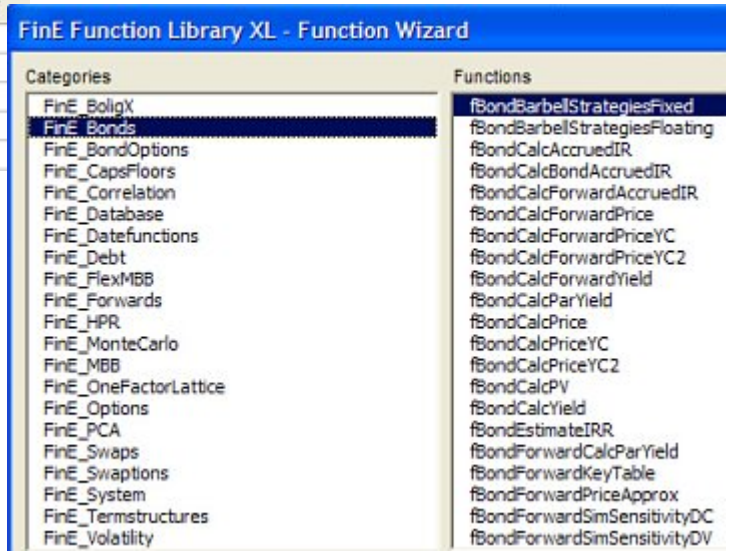


FinE comes with a flexible and intuitive Microsoft Excel interface. From here the users can perform any calculation and change any parameter available.



The Function Wizard makes it easy to find the right models, functions and documentation to support your analysis.

The functions are categorized in modules for easy access and better overview.

***fBondForwardPrice* Example**

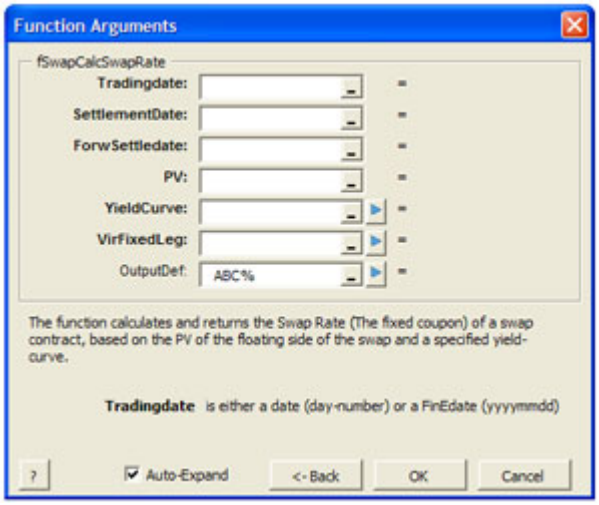
ForwardDate	04-12-2000	
SpotPrice	109,24	
SPriceCode	1	Clean price
dYield	*t_dYield*	
VirBond	DK0009919029	
OutputDef	A?!	

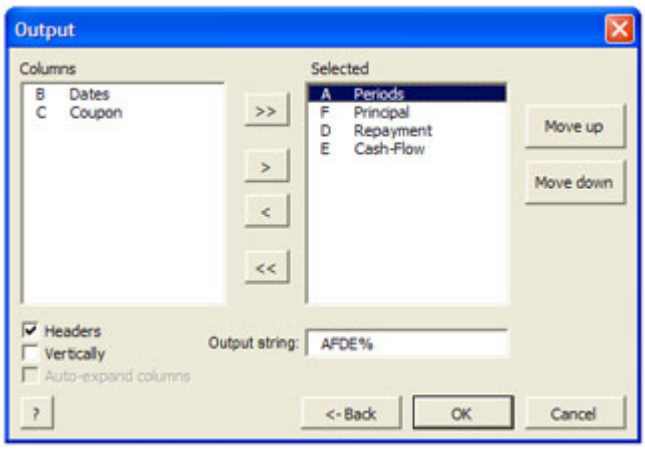
Result	
	129,702
	122,518
	115,834
	109,609
	103,810
	98,401
	93,355

t_dYield

-0,03
-0,02
-0,01
0
0,01
0,02
0,03

From the Function Wizard you can paste working examples on all functions directly into Excel.





One function might return several outputs. From the Insert Function interface you can specify the output format most suitable for your development needs.

The Insert Function interface in **FinE** comes with built-in features to manage array functions in Excel in a flexible and user-friendly manner.