

Financial Derivatives Toolbox 5.6

Model and analyze equity and fixed-income derivatives

Financial Derivatives Toolbox extends Financial Toolbox with tools for analyzing and modeling equity and fixed-income derivatives and securities contingent on interest rates. You can use the toolbox to compute prices and sensitivities, view price evolutions, and perform hedging analyses using common equity and fixed-income modeling methods.

Key Features

- Computes prices and sensitivities of vanilla and exotic equity options using the CRR, EQP, or ITT model
- Calculates the prices of any set of supported instruments based on an interest-rate structure
- Computes prices and sensitivities of fixed-income instruments using the HJM, BDT, BK, or HW model
- Provides strategies for minimizing the cost of hedging a portfolio given a set of target sensitivities, and minimizing portfolio sensitivities given maximum target costs

Working with Equity Options

The toolbox provides functionality for modeling the evolution of stock prices using the Cox-Ross-Rubinstein (CRR), the Equal Probabilities (EQP), or the Implied Trinomial Tree (ITT) method. With these discrete-time modeling methods, you can create binomial or trinomial trees and illustrate the expected stock price for each node in the tree with the corresponding volatility. The toolbox also provides functionality for calculating portfolio prices and sensitivities based on a binary and trinomial equity price tree.

Financial Derivatives Toolbox supports the following equity options:

- Vanilla (American, European, Bermuda)
- Compound
- Barrier
- Asian
- Lookback

Working with Fixed-Income Instruments

Financial Derivatives Toolbox includes functions for finding the prices and sensitivities of several financial instruments based on interest-rate curves. You can apply the functions to a portfolio of different types of instruments or to groups of instruments of the same type.

The toolbox also provides functions that use the Heath-Jarrow-Morton (HJM), Black-Derman-Toy (BDT), Black-Karasinski (BK), and Hull-White (HW) models to compute prices and sensitivities for other financial instruments.

Financial Derivatives Toolbox supports the following fixed-income instruments:

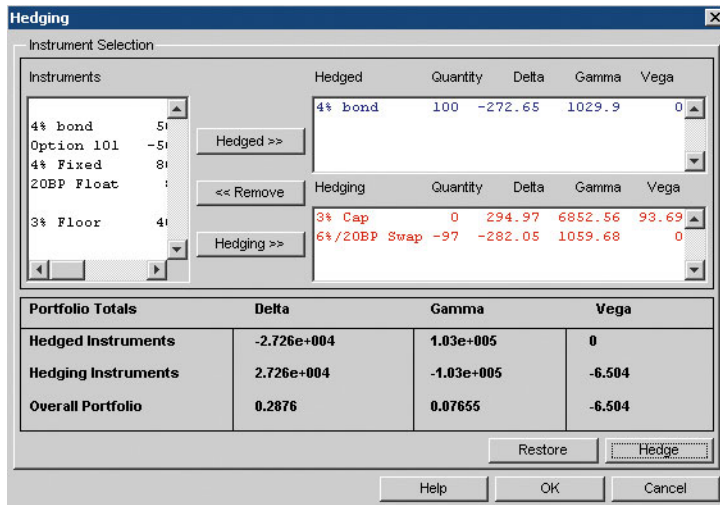
- Bonds and options on bonds
- Arbitrary cash flows
- Fixed-rate and floating-rate notes
- Caps and floors

- Vanilla swaps

Creating Portfolios and Hedging Strategies

Financial Derivatives Toolbox provides functionality for pricing portfolios and applying hedging strategies. You can:

- Create and manage portfolios that include several types of financial instruments
- Calculate the price and sensitivities for each instrument and the total portfolio
- View the results either numerically or graphically
- Define a hedging strategy using selected instruments within a portfolio to achieve a target sensitivity or cost



Hedging strategy developed in Financial Derivatives Toolbox.

Resources

Product Details, Demos, and System Requirements

www.mathworks.com/products/derivatives

Trial Software

www.mathworks.com/trialrequest

Sales

www.mathworks.com/contactsales

Technical Support

www.mathworks.com/support

Online User Community

www.mathworks.com/matlabcentral

Training Services

www.mathworks.com/training

Third-Party Products and Services

www.mathworks.com/connections

Worldwide Contacts

www.mathworks.com/contact