Counterpoint Dynamics

cpStudio

DERIVATIVE PRICING & ANALYTICS PLATFORM

Transparent derivative pricing and risk analytics at your fingertips

An independent derivative analytics platform connecting transparent pricing, sensitivities, market risk, margin, xVA and counterparty analytics in a single, reproducible framework.

PLATFORM CAPABILITIES

TRADE CAPTURE

- One-line description or full instrument detail trade input
- Interest rate swap, OIS (ZARONIA), FRA, FRN, Basis swap, Foreign Exchange contract, FX Swap, Cross-currency swap, Loan/Deposit
- Credit-linked notes and commodity Asian swaps
- Bulk import of trades

MARKET DATA & CURVES

- Timeseries with metadata; manual, public or vendor
- Reference-rate scraper and scheduled curve imports
- Conventions driven IR curve bootstrapping and calibration

PRICING ENGINE

- Traced formula – every price is an explicit formula that can be traced for audit purposes
- Exact closed-form sensitivities
- Monte Carlo, including xVA and pricing under scenarios
- Optimised over CPU, GPU or cluster

ANALYTICS & WORKFLOW

- Valuation, xVA, sensitivities (PV01, FXDelta etc.) and trade event functionality
- Trade, portfolio, counterparty or entity scope
- API, Python and Jupyter access for advanced quant work
- Excel export with formulas and input data

TECHNICAL FOUNDATION

PostgreSQL • C# services • F# pricing engine • Python & Jupyter
Cloud, on-premises containers or hybrid deployment

MARKET RISK — THE CORE DIFFERENTIATOR

Know your exposure under different scenarios. Forecast into the future with Monte Carlo generated scenarios or Historical VaR

EXACT RISK

Sensitivities are derived by differentiating the traced pricing formula or by bumping curves and revaluing.

TRANSPARENCY

The exact formula behind a price is viewable with one click, with linked market-data references and versioned records.

INDEPENDENT CHALLENGE

Export the live formula and data to Excel so disputed sensitivities can be reproduced outside cpStudio.

Counterpoint Dynamics

cpStudio

DERIVATIVE PRICING & ANALYTICS PLATFORM

REGULATORY MEASURES

SIMM & FRTB

- SIMM: sensitivity-based initial margin, with forecasting
- FRTB – Market risk regulatory capital built on the same exact sensitivity capability

COUNTERPARTY CREDIT RISK

CVA / DVA / FVA & PFE

- Monte Carlo simulation of trades per netting set
- Hull-White one- and two-factor models for Interest rates; GBM for commodity/equity
- Exposure profile charting over time per netting set or counterparty

TYPICAL MARKET RISK WORKFLOW

01 CAPTURE
Capture a derivative trade; conventions fill in required detail.

02 PRICE
Generate a price with traced pricing formula.

03 SENSITIVITIES
Generate sensitivities e.g. PV01, FX Delta, Vega, Gamma

04 REVIEW
Inspect the pricing formula and linked market data.

05 REPRODUCE
Export formula and data to Excel for independent verification.

06 MARGIN / xVA
Use the same foundation for IM and VM and exposure analytics.

ROADMAP FOR FUTURE cpSTUDIO FUNCTIONALITY

MORE TRADE TYPES
Commodity futures and options
Quantos
Equity derivatives
Credit derivatives

VaR
Historical and scenario-based VaR built on the existing sensitivity and scenario engine.

STRESS TESTING
Defined, repeatable scenario sets with reporting.

MODEL CALIBRATION
Market-object generators for stochastic and correlation calibration from market data.

cpStudio

An independent derivative analytics platform connecting transparent pricing, exact auto-differentiated sensitivities, market risk, margin, xVA and counterparty analytics in a single, reproducible framework.