

# Counterparty Credit Risk in Derivatives

A three-day workshop for credit risk, derivative and finance professionals to assess counterparty risk in derivative transactions.

## TARGET AUDIENCE

Risk managers, bankers, analysts, controllers and regulators who need to understand how derivative credit risk is measured, mitigated and accounted for in an increasingly complex world. A basic understanding of derivative product structures is required.

## COURSE OBJECTIVE

The aim of this three-day course is to enable attendees to identify the key categories and drivers of transaction credit risk in the main derivative products, and to apply a consistent approach to the quantification of these risks. Specifically, participants will be equipped to:

- Understand the various types of counterparty credit risk occurring in derivative products and repurchase agreements (repos)
- Assess in detail the counterparty credit risks in interest rate, foreign exchange, credit derivative, equity, and repo products
- Apply lessons learned from the current crisis to structure and reduce counterparty risk
- Calculate the counterparty credit risk of a portfolio of transactions
- Analyse and reverse engineer complex derivative transactions to determine counterparty risk.

## CONTENT

### ANALYTIC OVERVIEW

The aim of this section is to define the major categories of derivative credit risk, to differentiate them from both market risk and other credit risk types and to understand how derivatives are reflected on the balance sheet of clients.

#### Risk overview

- Differentiating derivative credit risk from other forms of credit risk
- Defining the eight categories of derivative credit risk: current mark-to-market, pre-settlement risk ("PSR"), settlement risk, payment timing mismatch risk, premium payment risk, lending risk, issuer risk and transfer risk
- Describing different approaches to calculating pre-settlement risk: strengths and weaknesses of the main approaches
- Different measures of pre-settlement risk: Peak Exposure, Average or Loan Equivalent Exposure, calculation and use of the Credit Valuation Adjustment (CVA)
- Stress testing pre-settlement risk:
- Why stress testing is necessary and particular areas of concern
- Different stress test approaches: Hypothetical & Historical stress testing, Expected Shortfall
- Contrasting credit risk and market risk.

## DERIVATIVE PRODUCT CATEGORIES

This segment of the course covers the major families of derivative products. It includes the evolution of different product structures, how they are used, the resulting cash-flows and the credit risks that arise in each type of transaction. This will cover credit risks from the simple to those with the most complex features

### Currency derivatives

- Types of transaction: FX forwards, FX options, and cross currency swaps
- Product structures and cash-flows
- Credit risks, risk drivers and estimating PSR
- Settlement risk: definition and risk mitigation approaches
- Warning signals: barrier options, embedded loans, and wrong way trades.

### Interest rate derivatives

- Transaction types: vanilla and structured interest rate swaps, caps, floors and swaptions
- Product structures and cash-flows
- Credit risks, risk drivers and estimation approaches
- PSR exposure estimation: a step-by-step approach
- Quick and dirty estimation of PSR
- Warning signals: embedded loans, impact of timing mismatches
- Common non-standard swaps and their credit risks.

### Credit derivatives

- Types of transaction: (a) credit default swaps ("CDS"), and (b) replication products such as total return swaps and credit spreads products
- Product variants and uses, including portfolio and index swaps, and sovereign CDS
- Specific risks relevant to CDS : default definitions, settlement methods, reference security, corporate events, recovery rates
- Unwind / settlement issues arising from the credit crisis
- PSR methodology: basic approach and issues to consider.

### Equity derivatives

- Types of transaction: forwards, total return swaps, options, contracts for difference
- Specific risks relevant to equities e.g. event risk, correlation / wrong way exposures, legal and regulatory issues
- Volatility and variance swaps
- Product structures and the impact on credit risks.

### Repos

- Product structure
- Comparing repos with buy / sellbacks and secured loans
- Credit risks.



### MANAGING EXPOSURES

The focus of this section is two-fold: to quantify the aggregate risk with a counter party by assessing the portfolio of transactions from the simple to the complex and to manage, and reduce where necessary, aggregate credit exposures from derivatives.

#### Documentation

- Key documents: ISDA agreement (“ISDA”) and credit support annex (“CSA”)
- General structure of the ISDA agreement
- Key credit issues to be considered in negotiating an ISDA and a CSA
- Considerations in the event of a default.

#### Credit mitigation

- Credit mitigation techniques: collateral, netting, early termination, cash settlement, resets, guarantees, CDS
- Uses and potential problems with the different mitigation techniques
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- Focus on collateral: types, haircuts, risks and exposure calculation
- Initial and variation margin arrangements
- Threshold arrangements.

#### Combining exposures

- How credit limit structures deal with credit risk on a portfolio basis
- Key issues in exposure aggregation and how aggregation works in practice
- Combining exposures while capturing portfolio effects
- Key challenges: different maturities, offsetting deals.

#### Unbundling basics and complex transactions

- Reverse engineering a complex trade into its components
- Structured approach to assessing complex trades
- How options are used in complex transactions.

### Learning Paths



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