



## 19BAE710-FINANCIAL DERIVATIVES

### Credit risk

Credit risk is a significant consideration in the context of financial derivatives. It refers to the risk that one party in a financial transaction may default on its contractual obligations, leading to financial losses for the counterparty. Understanding and managing credit risk is crucial for participants in derivative markets.

#### 1. Definition of Credit Risk:

- Credit risk (default risk): The risk that a counterparty fails to meet its financial obligations under a derivative contract.

#### 2. Factors Contributing to Credit Risk:

- Financial Health of Counterparty: The overall financial condition of the counterparty affects its ability to fulfill obligations.
- Market Conditions: Changes in economic conditions, interest rates, or other market factors can impact a counterparty's creditworthiness.
- Counterparty-Specific Factors: Business operations, management practices, and industry-specific risks can influence credit risk.

#### 3. Credit Risk Assessment:

- Credit Ratings: Derivative counterparties are often assigned credit ratings by rating agencies, providing an indication of their creditworthiness.
- Internal Credit Assessment: Market participants may conduct their internal assessments of counterparty credit risk.

#### 4. Credit Risk Mitigation:

- Collateralization: Parties may require collateral to mitigate credit risk. Variation margin and initial margin are commonly used.
- Credit Support Annex (CSA): Legal agreements defining collateral requirements and terms.
- Netting Agreements: Agreements that allow offsetting gains and losses across multiple derivative transactions.

## **5. Types of Derivative Credit Risk:**

- Counterparty Credit Risk: The risk that the counterparty defaults before the derivative contract matures.
- Settlement Risk: The risk that one party pays but does not receive the agreed-upon amount at the settlement time.
- Replacement Risk: The risk of replacing a defaulted counterparty's position in the market.

## **6. Credit Valuation Adjustment (CVA):**

- Definition: The adjustment made to the derivative's value to account for the potential credit risk of the counterparty.
- Calculation: CVA is calculated based on the expected exposure and the probability of default of the counterparty.

## **7. Regulatory Considerations:**

- Basel III: International regulatory framework establishing minimum capital requirements and supervisory guidelines to address credit risk in banking.
- Dodd-Frank Act (U.S.): Imposes regulations on derivatives to reduce systemic risk, including provisions related to clearing and margin requirements.

## **8. Counterparty Risk Management:**

- Due Diligence: Thoroughly assess counterparty creditworthiness before entering into derivative transactions.
- Credit Limits: Set limits on exposure to individual counterparties to manage concentration risk.
- Credit Risk Policies: Develop and adhere to robust credit risk policies.

## **9. Documentation:**

- ISDA Master Agreement: Standardized documentation provided by the International Swaps and Derivatives Association (ISDA) that includes terms for credit support, collateral, and netting arrangements.

## **10. Credit Risk Models:**

- Credit Exposure Models: Quantitative models used to estimate potential credit exposure in derivative transactions.
- Credit Default Swaps (CDS): Financial instruments used for hedging or speculating on the credit risk of a particular entity.

### **11. Monitoring and Reporting:**

- Regular Monitoring: Continuously monitor counterparty creditworthiness.
- Reporting: Establish reporting mechanisms to track and report credit risk exposure.

### **12. Credit Risk in Different Derivative Types:**

- Interest Rate Swaps and FX Forwards: Typically have lower credit risk due to the exchange of fixed or floating cash flows.
- Credit Default Swaps (CDS): Explicitly designed to manage and transfer credit risk.

### **13. Legal Documentation:**

- ISDA Documentation: Establishes legal and operational terms for derivative transactions, including credit risk mitigation measures.

Credit risk in financial derivatives requires careful consideration and active management. Participants in derivative markets employ a range of strategies, tools, and agreements to mitigate credit risk and ensure the stability and integrity of these markets.