CVA and CCP

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Counterparty Credit Risk during the Credit Crisis

- Lack of transparency in OTC market
- Large risk concentrations among counterparties
- Financial soundness of counterparties unknown
- Cutting back of exposures to large dealers
- Cascade of margin calls triggered asset fire sales
“...all standardised OTC derivatives contracts should be traded on exchanges or electronic platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivatives contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements.”

In 2011, margin requirements on non-centrally cleared derivatives added.
Basel III – Counterparty Credit Risk

Reforms to ensure that banks adequately capitalise exposures to counterparty credit risk, whether arising from other banks or from CCPs.

Impact reforms: on average, capital requirements for bilateral counterparty credit risk will at least double.

- **Asset Value Correlation (AVC);**
  For large regulated FIs; affects for example IRC calculation

- **Credit Value Adjustment (CVA);**
  MtM adjustment due to the changes in counterparty’s credit quality.

- **Exposures to Central CounterParty:**
  no longer regarded as risk free.
Basel III – Counterparty Credit Risk

Basel III Capital Requirements on Derivatives

Non-Centrally Cleared:

- CVA
- Bilateral Margin Requirements

Centrally Cleared:

- Trade Exposure
- Default Fund

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Basel III – Non central clearing

- Total counterparty credit risk capital
  
  =
  
  Counterparty credit risk capital (default)
  
  +
  
  CVA capital (migration)
Basel III – Non central clearing

- Risk-weighted asset of positions =

\[ \sum \text{value of transaction} + \]

Independent of netting set

Trader(s)

CVA = aggregated CCR of transactions

Dependent of netting set

CVA Desk
Basel III – Non central clearing

- CVA – applicable to banks using OTC derivatives.
  - fair value adjustment
  - provision

- CVA capital ‘ingredients’:
  - credit spread/rating
  - exposure
Basel III – Non central clearing

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- CVA capital ‘ingredients’:
  - credit spread/rating
  - exposure
Basel III – Non central clearing

- Art 382; all OTC derivatives, except
  - Credit derivatives recognised to reduce risk-weighted exposure amounts for credit risk.
  - Securities Financing Transacions (SFT), if supervisor opines that the exposure is not material.
  - Central CounterParty (CCP) (direct and indirect)
  - Non-financial counterparties (transactions below clearing threshold)*.
  - Sovereigns en overheidsinstanties*
  - Intragroup transactions*
  - Pensionfunds*
  - ESCB members, multilateral development banks, EFSF, ESM, …*
Baseline III – Non central clearing

No CCP

- Counterparty I
  - Derivative A
  - Derivative B
  - Derivative C
  - Counterparty III

With CCP

- Counterparty I
  - Derivative A
  - Derivative B
  - Derivative C
  - CCP

  - Counterparty III
  - Counterparty II
  - Counterparty III
  - Counterparty II

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Basel III – Non central clearing

- Sovereign A
  - Derivative A
    - Counterparty I
      - Derivative B
        - Counterparty II

No CVA charge

CVA charge
Basel III – Non central clearing

De Nederlandsche Bank

CVA and CCP

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**Basel III – Non central clearing**

Internal Model Method approval for Counterparty Credit Risk? and Approval of Internal model for specific risk of debt instruments?

Yes

Advanced CVA (ACVA):
- EAD based on Expected Exposure
- VaR and SVaR
- $K_{ACVA} = 3 \times (VaR + SVaR)$
- Market implied Loss Given Default
- CDS proxy scheme

No

Standardised CVA (SCVA):
- EAD based on Current Exposure Method (CEM) or Standardised Method
- no VaR or SVaR; CVA charge is result of formula
- Mapping of counterparty credit rating to weights
- Stress contained in weights
EBA Regulatory Technical Standards: (ACVA only)

- Proxy scheme for CDS
- Limited number of smaller portfolios
  - Criteria that VaR Spread methodology has to satisfy in order to allow for a proxy spread to be used in the calculation of the advanced CVA charge
  - Standardised CVA
  - the number of non-IMM transactions subject to the CVA risk with respect to the total number of transactions subject to the CVA risk charge;
  - the size of each individual non-IMM portfolio subject to the CVA risk with respect to the total size of all portfolios subject to the CVA risk charge;
  - the total size of non-IMM portfolios subject to the CVA risk with respect to the total size of all portfolios subject to the CVA risk charge.
Risk Mitigation:

- Hedging of CVA
- Collateral
  - ACVA: taken into account in determining the expected exposure.
  - SCVA: taken into account in determining the EAD.
    - CEM: \( EAD = MtM + Add-on - Collateral \)
Hedging CVA: Only Credit Default Swaps

- **ACVA**
  - Single name CDS
  - Index CDS
    - Basis risk: provided that the basis between any individual counterparty spread and the spreads of index credit default swap hedges is reflected, to the satisfaction of the competent authority, in the Value-at-Risk.

- **SCVA**
  - Single name CDS
  - Index CDS
    - Counterparty included in index CDS; the institution may subtract the notional amount attributable to that counterparty in accordance with its reference entity weight from the index CDS notional amount and treat it as a single name hedge.
Basel III – Central clearing

1. Risk-sensitive treatment
2. Non-Risk sensitive treatment

3 steps:
1. Determination of hypothetical capital of CCP.
2. Determination of total capital requirement of surviving CMs
3. Distributions of total capital requirement of step 2 to CMs

RWA determination of *trade and default fund* contribution:
for CM $i$
$$\min\{2\% \times \text{TE}_i + 1250\% \times \text{DF}_i; 20\% \times \text{TE}_i\}$$

Compromise among CPSS and BCBS

Currently, new risk sensitive method out for consultation developed jointly by CPSS and BCBS.
Determination of Default Contribution risk-sensitive treatment

Pre-funded capital of surviving CMs

\[ DF'_{CM} = \sum DF_{CM_i} - 2*DF \]

Pre-funded capital of CCP

\[ K_{CCP} \]

Situatie 1

\[ K'_{CM} = B + 1.2 \cdot A \]

Situatie 2

\[ K'_{CM} = C + \alpha \cdot D \]

Situatie 3

\[ K'_{CM} = \alpha \cdot E \]

K_{CM_i} determined from K_{CM}

CVA and CCP

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