Basel III Framework

Capital requirement for bank exposures to central counterparties

EURONEXT CLEARING

July 2024

Regulatory Framework

- ***International level***: Basel Committee on Banking Supervision
  - *Standardised approach: credit risk mitigation* (CRE 22)
  - *Standardised approach to counterparty credit risk* (CRE 52)
  - *Capital requirements for bank exposures to central counterparties* (CRE 54)
- ***EU level***:
  - Regulation EU 648/2012
  - Regulation EU 575/2013, on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012
  - Regulation EU 876/2019, amending Regulation (EU) No 575/2013

Two exposures types are envisaged by the outstanding Framework, amended by Regulation 876/2019:

Changed

Default Fund exposures — CCP Default risk / CMs Default risk

- For **Derivatives sections**, revised K_{CCP} calculation methodology, by transposing *Standardized Approach for measuring Counterparty Credit Risk* ("SA-CCR").
- For **Fixed Income section**, Kccp calculation methodology envisages application of *Financial Collateral Comprehensive Method*.

Unchanged

Trade exposures

- Trade exposures include **variation margin** due by the CCP to the Clearing Member or to the client, but not yet received, as well as **initial margin** posted
- If collateral is "**bankruptcy remote**" (i.e. if the CCP defaults, the Clearing Member does not lose the collateral), **the risk weight applied to the collateral is 0%**
- **A 0% risk weight is applied to margins collected by Euronext Clearing**

Calculation of Hypothetical Capital

Changed

Derivatives sections
(for Euronext Clearing, futures/options)

$$K_{CCP} = \sum_{CMi} EAD_i * RW * CR$$

where EAD_i is calculated according to
Standardized Approach
for Counterparty Credit Risk (SA-CCR)

Introduced by Regulation EU 876/2019

Unchanged

Fixed Income section
(for Euronext Clearing, Repos)

$$K_{CCP} = \sum_{CMi} \max(EBRM_i - IM_i - DF_i; 0) * RW * CR$$

where $\max(EBRM_i - IM_i - DF_i; 0)$ is calculated according to
Financial Collateral Comprehensive Method

Introduced by Regulation EU 575/2013

For derivatives exposures, the **New Standardized Approach (SA-CCR)** for measuring exposure at default (EAD) for counterparty credit risk (CCR) replaced both standardized methods in force: Current Exposures Method (CEM) and Standardized Method (SM).

Main objectives of the SA-CCR approach:

- Devise an approach suitable for a wide variety of derivatives transactions
- Address known limits of the CEM
- Improve the risk sensitivity of the capital framework

Exposure at Default for Derivatives sections

Standardized Approach for Counterparty Credit Risk

Exposure at Default: $EAD = 1.4 * (RC + PFE)$

Replacement cost: $RC = max(V - C; 0)$

The loss that would occur if a counterparty were to default at the present or at a future time, if closeout and replacement of transactions occur instantaneously

- From a Euronext Clearing perspective, V consists of CMs' net variation margins on Futures and net Options premiums.
- C is the overall collateral posted by the Clearing Member (covering Initial Margins and Default Funds). C includes also excess collateral.

Potential Future Exposure $PFE = \mathrm{m} * \mathrm{AddOn}$

Potential change in value of the trades during the period between the last exchange of collateral before default and replacement of the trades in the market

- m allows reduction of PFE, how much more collateral is posted by CMs over the required amounts.
- $AddOn$:
  - represents a potential conservative increase in CCP's exposure, over the time horizon needed to close-out positions of the defaulting CM
  - allows a full risk offset when trades lie within the same underlying and a partial offset between trades stemming from different underlying
  - it is a function of trade's adjusted notional, time horizon needed for position's close-out, product's delta and a supervisory factor reflecting volatility.

Exposure at Default for Fixed Income section

Financial Collateral Comprehensive method

For collateralised transactions like Repurchase Agreements, the exposure amount after risk mitigation is calculated as follows:

$$EBRM = max\{0, E * (1 + H_e) - C * (1 - H_c - H_{fx})\}$$

where:

$EBRM$ = the exposure value before the risk mitigation of Initial Margins and Default Fund

E = current value of the exposure

H_e = volatility adjustment appropriate to the exposure (depends on residual maturity, rating class and liquidation period)

C = the current value of the collateral

H_c = haircut appropriate to the collateral (depends on residual maturity, rating class and liquidation period)

H_{fx} = haircut appropriate for currency mismatch between the collateral and fx exposure

Calculation of C-factor

$$c - factor = max\left(\frac{K_{CCP}}{DF_{CCP} + DF_{CM}}; 8\% * 2\%\right)$$

Amended by Regulation EU 876/2019

where

- DF_{CM} = total DF contributions
- DF_{CCP} = CCP Skin-in-The-Game
- K_{CCP} = CCP Hypothetical Capital
- K_{CM} depends on K_{CCP} level compared to DF_{CCP} and DF_{CM}

Main changes on c-factor calculation formula:

- A floor on capital coefficient is established (equal to 0.16%)
- Concentration Factor β is no longer applied
- K_{CCP} is directly involved in c-factor calculation
- K_{CCP} is calculated at sub-account level

Reporting and disclosure

Euronext Clearing discloses monthly, for each Default Fund, **C-Factor** plus the figures to calculate it (K_{CCP}, DF_{CM}, DF_{CCP}). The following Reports are disclosed:

Basel III Parameters for
Equity/Commodity Derivatives Default Fund

Report MB02 (for Borsa Italiana Clearing Members)
Report DB01 (for ENX Legacy Clearing Members)

Basel III Parameters for
Fixed Income Default Fund

Report MB04 (for Borsa Italiana Clearing Members)

Basel III parameters are available to Euronext Clearing's direct Clearing Members:

- through the **BCS/ICWS** platforms, for Clearing Members having their membership in **Borsa Italiana** markets
- through the **WCS** platform, for Clearing Members having their membership in **Euronext Legacy** markets

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