

Basel IV: The new standardized approach for counterparty credit risk

The new standardized approach for counterparty credit risk (SA-CCR) will replace the existing current exposure method (CEM) and the standardized method (SM) to calculate the counterparty credit risk exposure. As a result, banks will have to make extensive changes to existing data repositories, to calculation methods for capital requirements and to their reporting for the regulator.

The new standardized approach for measuring counterparty credit risk exposures will be relevant for all institutions that have derivatives on their banking and/or trading books. It is also valid for banks which apply the internal models approach. To report Large Exposure and Leverage Ratio it is necessary to apply SA-CCR as well.

Motivation for the new standard

The SA-CCR was developed in response to the weaknesses of the current exposure method and standardized method in correctly representing the risk of derivative transactions. The CEM and SM methods are criticized for not being able to recognize the differences in risk level between transactions with and without daily margining. In addition, the two methods do not take sufficient account of the volatility level of recent stress periods in their add-on factors (for the CEM) or conversion factors (for the SM), respectively. Furthermore, the current exposure method is deemed to be too simple and the standardized method too complex with respect to netting and hedging.

Challenges for institutions

First, new data requirements must be implemented. These requirements differ significantly from the previous requirements and may therefore require access to other, previously unrelated data sources in some cases. These include, for example, information about netting agreements, such as the level of the threshold (TH), the minimum transfer amount (MTA) or the net independent collateral amount (NICA), which represents the provided and received collateral value that does not change in response to the value of the transactions it secures. Transaction-specific information will be required, such as the exercise date, exercise price and underlying for options or the attachment and detachment points for CDOs.

As a second step, the exposure at default (EAD) calculation should be implemented:

Exposure at default = 1,4 x (RC+PFE)

Replacement cost (RC) is different for transactions with and without a margin agreement

Replacement cost for transactions with a margin agreement

$$RC = \max (CMV-VM-NICA; TH+MTA-NICA; 0)$$

The potential future exposure (PFE) is determined on the basis of a multi-level aggregation of the add-on and taking in account any excess collateral

PFE = Add-On x Multiplier

Multi-level aggregation:

- Trade Level
- Hedging Set
- Asset Class
- Netting Set

Multiplier for excess collateral

$$\text{multiplier} = \min \left\{ 1; \text{Floor} + (1 - \text{Floor}) \cdot \exp \left(- \frac{CMV - NICA}{2 \times (1 - \text{Floor}) \cdot \text{AddOn}} \right) \right\}$$

This results in changes at the processing level, which also pose challenges. Particularly with respect to determining the add-on for the potential future exposure (PFE), the approach is much more complex than is the case for the CEM. The add-on for the transactions under a netting agreement corresponds to the total of the add-ons for each so-called “asset class”. The method for calculating the add-ons for each “asset class” was developed on the basis of the concept of a “hedging set”. A hedging set under the SA-CCR is a subset of transactions within an asset class that have similar attributes. Depending on the asset class, the results of netting buy and sell positions within a hedging set are partially or fully offset. The value of the add-on is thus dependent on the number of hedging sets within an asset class. This distinction is necessary in order to take account for basis risk and correlation differences within asset classes.

Another challenge is presented by the allocation of transactions to asset classes. This is based on the primary risk factors of the transaction, which must be determined correctly. In the case of certain exotic product types, it may be necessary to allocate a product to two asset classes and thus to include it in the calculation twice.

The benefits of working with BearingPoint:

- Early detection of existing data gaps
- Proactive initiation of measures to increase data quality
- Sample calculation of exposures using our calculation engine
- Our advisors have many years of experience in implementing various exposure calculation methods

BearingPoint supports the implementation

Our sample calculations have shown that depending on the structure of the portfolio (whether it mainly contains collateral that has been provided or received) and the structure of the netting agreements (whether they contain margining or not), the calculated exposures may increase considerably compared with the CEM method, resulting in an increase in the RWA. As one of the first providers on the market, we developed a flexible calculation engine for determining exposures in accordance with the SA-CCR, and we have already implemented this solution for our clients.

The following process model has proven successful:

Impact analysis	<ul style="list-style-type: none"> • Check the individual portfolio components to see if they are relevant for the SA-CCR • Structure the product portfolio in accordance with current requirements
Data requirements	<ul style="list-style-type: none"> • Review the existing trading, risk and reporting architecture • Define the data gaps for each product from the perspective of the SA-CCR
Implementation	<ul style="list-style-type: none"> • Support the implementation of a calculation engine, including: <ul style="list-style-type: none"> • Design of an input interface • Development of a data pool • Implementation of the calculation method
Results analysis and reporting	<ul style="list-style-type: none"> • Calculate the exposure values pursuant to the SA-CCR • Interpret and compare the results to those of the previous method • Prepare internal and external reports

Contact

Maik Frey
Partner
maik.frey@bearingpoint.com

Thorsten Kaiser
Partner
thorsten.kaiser@bearingpoint.com

About BearingPoint

BearingPoint is an independent management and technology consultancy with European roots and a global reach. The company operates in four units: Consulting, Solutions, Business Services, and Ventures. Consulting covers the advisory business; Solutions provides the tools for successful digital transformation, advanced analytics and regulatory requirements; Business Services provides managed services beyond SaaS; Ventures drives the financing and development of start-ups. BearingPoint’s clients include many of the world’s leading companies and organizations. The firm has a global consulting network with more than 10,000 people and supports clients in over 75 countries, engaging with them to achieve measurable and sustainable success.

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