SA-CCR: Why a Change is Necessary

A recent quantitative impact study completed by the International Swaps and Derivatives Association (ISDA) and FIS highlighted the potentially punitive impact of the Basel Committee's standardised approach for measuring counterparty credit risk exposures. In this briefing note, we outline the key findings and suggest a way forward.

Introduction

The Basel Committee on Banking Supervision's new standardised approach for measuring counterparty credit risk exposures (SA-CCR) will have a major impact on multiple components of the emerging regulatory capital framework. SA-CCR will not only replace both the current exposure method (CEM) and the standardised method (SM), but will also affect those banks that use the internal model method (IMM), as it will be used as the foundation of several key calculations in the overall capital framework.

ISDA and FIS recently completed a quantitative impact study (QIS) using the Basel Committee's own hypothetical portfolios. The study shows that SA-CCR's lack of risk sensitivity and conservative calibration could lead to a surge in exposures and capital requirements. This comes at a time when the Basel Committee has been directed not to introduce further significant increases to capital requirements, and could adversely impact derivatives end users, including corporates, sovereigns and pension funds.

The detailed findings of the QIS were conveyed to the Basel Committee on March 20, 2017[1]. This briefing note summarises what SA-CCR is, where it will be used and why it matters, as well as outlining the high-level findings of the QIS and suggesting a way forward to address the challenges associated with SA-CCR.

What is SA-CCR?

The Basel Committee finalised its new standardised approach for measuring counterparty credit risk exposures in 2014, with implementation scheduled for January 1, 2017. National regulators have yet to transpose the rules into law, meaning rollout has been delayed in most jurisdictions. But banks and regulators must remain mindful of the likely impact of SA-CCR, particularly as the approach could apply to more areas of the regulatory framework than initially intended.

In developing a new standardised approach to counterparty credit risk, the Basel Committee's objective was to find a more granular, risk-sensitive methodology that would appropriately differentiate between margined and non-margined trades, while also recognising the benefits of netting.

[1] http://www2.isda.org/functional-areas/risk-management/

Given the growing volume of trades being cleared and margined, the failure of CEM and SM to recognise the risk-mitigation benefits arising from margin posting was rightly recognised as a deficiency that needed to be addressed. The Basel Committee identified the need for a methodology that could be easily applied to a wide variety of transactions, while avoiding undue complexity and minimising discretion on the part of national regulators.

SA-CCR is calculated using replacement cost (RC), which is essentially the mark-to-market exposure with margin taken into account, and potential future exposure (PFE). Exposure at default under SA-CCR is calculated by multiplying an alpha factor of 1.4 by the sum of RC and PFE. The framework also introduces the concept of a 'hedging set', which is a set of transactions within a single netting set within which partial or full offsetting is recognised when calculating PFE.

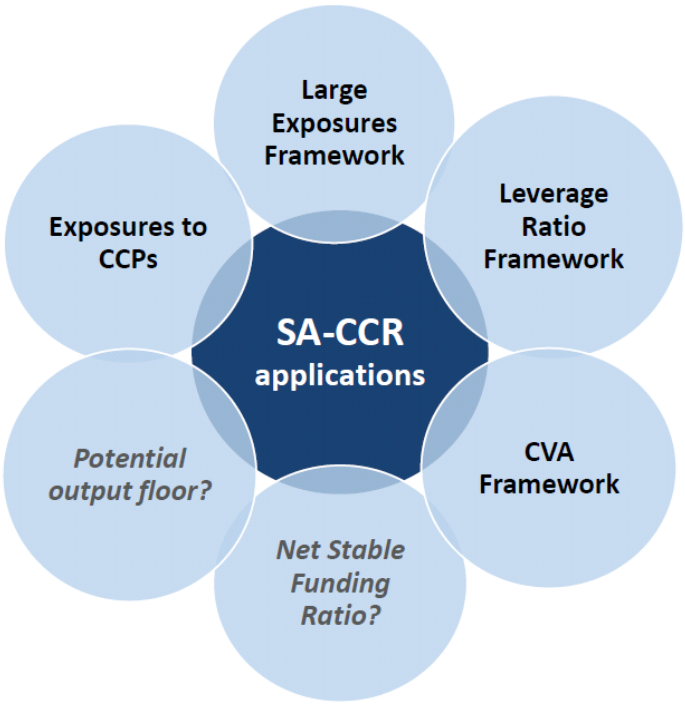
$$\textit{SA-CCR Exposure} = \mathbf{1.4} \times (\mathbf{RC} + \mathbf{PFE})$$

Alpha

Why Does SA-CCR Matter?

At first glance, SA-CCR may appear to be of little relevance to banks with large derivatives portfolios that are able to continue using the IMM to measure counterparty credit risk exposures. In reality, SA-CCR will be used as the foundation of multiple calculations within the capital framework, such as the leverage ratio, which means its influence is likely to be felt by all institutions, irrespective of the size and sophistication of their derivatives portfolios (see Figure 1).

Figure 1: How will SA-CCR be used?



Final standards on the Basel Committee's capital floor framework have not yet been published, but based on a previous consultation, it is expected that banks employing internal models will be required to use SA-CCR, alongside other standardised approaches, as inputs to an aggregate capital floor calculation.

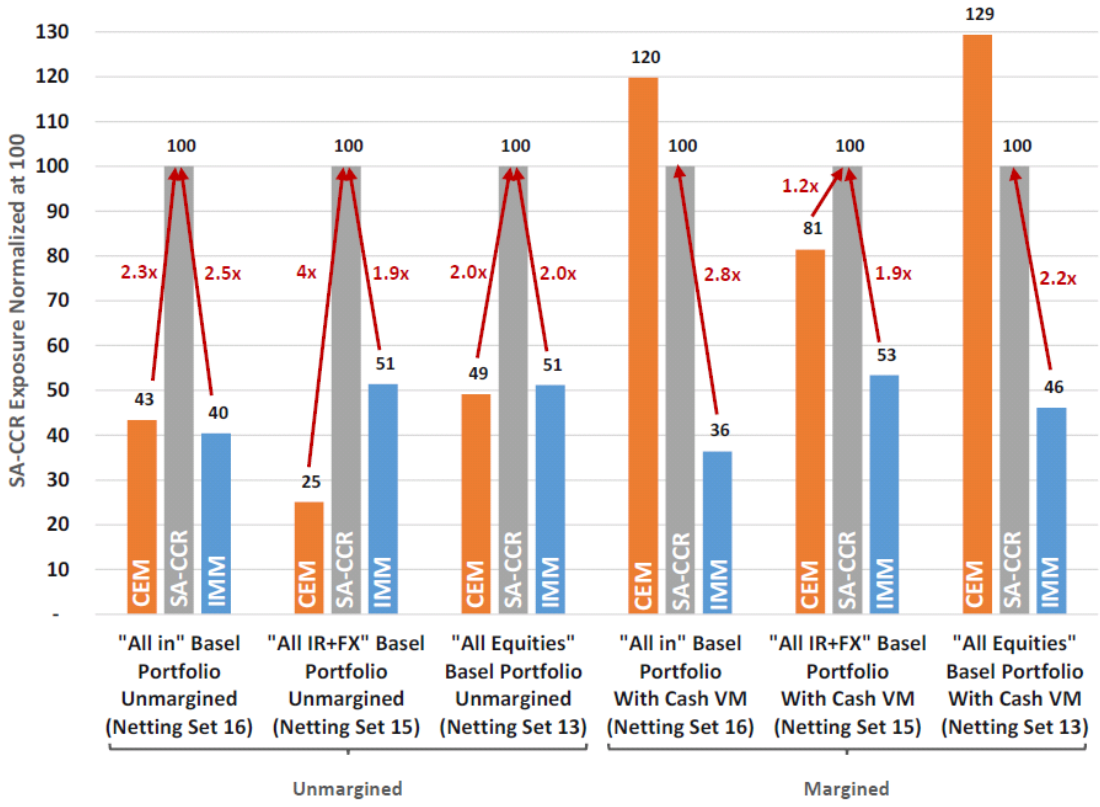
In addition to the leverage ratio, the large exposures framework and the central counterparty exposure calculation, SA-CCR is likely to be applied to other parts of the capital framework, including credit valuation adjustment capital requirements and the net stable funding ratio. SA-CCR will also be used for credit risk capital calculations for banks without IMM approval.

In all of these cases, SA-CCR looks set to be deployed either as an automatic replacement to CEM, as the mandatory method for new regulatory constructs, or as a floor to the IMM. The conservative design and calibration of SA-CCR could drive significant increases in exposures and capital requirements, which means its impact must be seriously considered.

What is the Expected Impact?

In early 2017, ISDA partnered with FIS to study the likely quantitative impact of SA-CCR, using the Basel Committee's own hypothetical portfolios drawn from its regulatory consistency assessment programme (RCAP). The study shows that SA-CCR exposures can be a multiple of equivalent CEM or IMM exposures across different products and portfolios.

Figure 2: Comparison of SA-CCR, CEM and IMM exposures



Significant differences can be observed in Figure 2 between the exposures calculated under SA-CCR, CEM and IMM. Netting set 16 represents all 18 hypothetical portfolios within the RCAP, which includes interest rates, equities and FX. Netting set 15 comprises all of the interest rate and FX portfolios, while netting set 13 comprises only the equity portfolios.

For non-margined trades – represented by the first three sets of bars – SA-CCR would result in far greater exposures, and hence higher capital requirements, than both CEM and IMM across all three netting sets. In the case of interest rates and FX, SA-CCR exposures could be as much as four times greater than CEM exposures. For equity portfolios, SA-CCR would lead to exposures of around double the size of those calculated under both CEM and IMM.

When cash variation margin is received, the effects are somewhat different, because SA-CCR is deliberately calibrated to recognise the effects of collateral. As a result, SA-CCR generates a lower exposure than CEM for both the full portfolio and equity portfolio. But the fact there is still such a large jump from IMM to SA-CCR for margined portfolios – as much as 2.8 times in the case of the full portfolio and 2.2 times in the case of equities – shows that the calibration of SA-CCR does not fully recognise the risk mitigation delivered by variation margin.

While regulators have sought to avoid a direct comparison between CEM and SA-CCR in the past, on the basis that CEM is considered to be flawed, it will still be the starting point in many of the areas where the new methodology will apply. This highlights the importance of the potentially significant increase in capital requirements when moving from CEM to SA-CCR, and must not be underestimated.

The significant gap between SA-CCR and IMM in all of the portfolios in Figure 2 is particularly concerning, because IMM will continue to be used by larger banks. The QIS suggests SA-CCR cannot yet be considered a credible fallback for firms that do not use internal models, nor can it play the role of a floor to IMM, because the resulting exposures on the same portfolios are so much higher.

Furthermore, although the new framework is designed to better recognise the benefits of collateral, the fact that non-margined portfolios appear to be punitively hit by SA-CCR stands to adversely affect certain financial and non-financial end users relying on bespoke hedging products to manage financial risks. It is corporates, sovereigns and pension funds that will most often trade on a non-cleared, non-margined basis as a result of end-user exemptions, but they may now find themselves facing limited hedging availability at a much higher cost as a result.

What's Driving the Impact?

The steep increase in exposures and capital requirements identified by the study derive from a number of key factors in the design and calibration of SA-CCR.

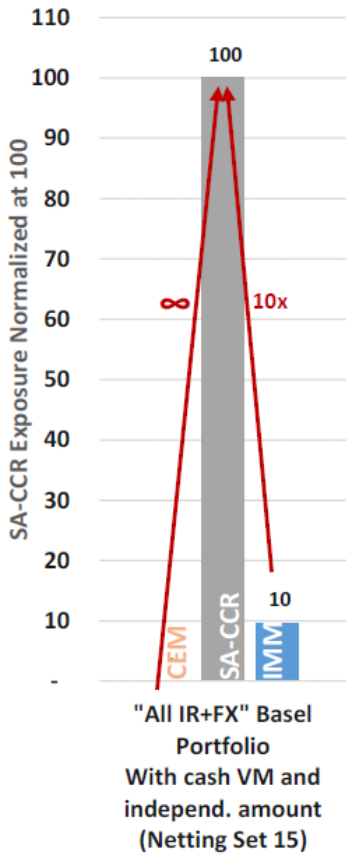
Firstly, the alpha factor is set at 1.4 – the original value set by the Basel Committee for IMM in 2005. This calibration is based on studies dating back to 2003, and does not reflect the current market environment, particularly in light of larger portfolio diversification effects, and wider clearing and margining practices.

In addition, the alpha factor of 1.4 was never designed to apply to a standardised methodology, but rather to account for model risk and severe market moves that could affect the use of an internal model to calculate exposures. If recalibrated accurately with a larger pool of counterparties and risk factors, ISDA analysis suggests the alpha value should fall to 1.01.

In addition to the punitive effects of the alpha factor, it can be observed that the degree of exposure reduction resulting from the exchange of initial margin is not sufficiently aligned with the actual level of risk mitigation provided.

In Figure 3, the interest rate and FX portfolio benefits from both cash variation margin and independent amount (initial margin). Having a negative mark to market, the RC of the portfolio is zero and the initial margin should offset the PFE in the SA-CCR calculation, which should result in significantly reduced exposure.

Figure 3: The impact of variation margin and independent amount



The fact that the independent amount posted on the portfolio is larger than the PFE is reflected in the relatively low exposure resulting from IMM (while exposure under CEM is zero as a result of the negative mark to market), but the exposure calculated under SA-CCR on the same portfolio would be 10 times higher than under IMM.

This clearly shows that the risk-mitigating benefits of initial margin are inadequately captured by the current calibration of SA-CCR.

A number of other factors are also driving the disproportionate impact of SA-CCR[2]:

- There is no recognition of diversification across hedging sets within asset classes, which is excessively conservative and risk insensitive, resulting in counterparty credit risk being overstated.

- In the FX asset class, the framework does not allow for netting of cash flows in each currency to a single net amount.

- Multiple credit support annexes (CSAs) in a single netting set are penalised, as SA-CCR requires banks to divide a netting set into sub-sets to align with the CSAs, thereby reducing netting.

[2] For further detail on these industry concerns, impacts and suggestions on recalibration, see table in Annex

- The framework's options delta calculation approach is operationally challenging, and unsuitable for negative interest rates, American and Bermudan options.

What Can Be Done?

As there are multiple factors in the design and calibration of SA-CCR that could result in significantly increased capital requirements, there are various ways in which each factor could be addressed to reduce the impact. The PFE multiplier, for example, could be made more sensitive to collateral to ensure the benefits of initial margin are fully recognised, or the framework could be adjusted to allow for diversification across hedging sets and netting of cash flows in different currencies to a single net amount.

However, SA-CCR was finalised in 2014, and should already have been implemented by now, so substantive technical changes to the framework may not be practicable. In addition, if multiple tweaks are made to the calibration, the resulting improvements will inevitably be uneven across exposures. In solving one issue, further problems may be introduced.

In light of this, the simplest and most practical solution would be to address the conservative calibration of SA-CCR via the alpha factor. As highlighted by the QIS, an alpha factor of 1.4 is not only outdated, having been conservatively calibrated in 2005 on the basis of market conditions at that time, but was never designed for a standardised methodology. Applying a 40% increase to all exposures when SA-CCR is already highly conservatively designed and calibrated would have a detrimental impact on the availability and cost of financial hedges to end users.

Removing alpha from SA-CCR calculations would better align actual exposures and associated capital requirements, while retaining the risk-sensitive methodology and recognition of margin that lies at the heart of SA-CCR. The logic behind the alpha factor must be revisited in the context of SA-CCR, and must reflect current market conditions and higher levels of margining, clearing and counterparty credit risk capital.

Conclusion

The need to replace CEM and SM with a more up-to-date, risk-sensitive methodology is clear, and the Basel Committee's objectives in developing SA-CCR were fundamentally sound. However, the results of the QIS clearly show that implementing the framework as currently calibrated is likely to have far-reaching negative consequences.

Focusing solely on the alpha factor may appear to neglect some of the more nuanced SA-CCR issues highlighted in this briefing note. But if properly reconsidered and recalibrated, an adjustment to alpha could significantly improve the alignment between actual levels of exposures, risk and capital requirements resulting from SA-CCR, and result in a far more effective and truly risk-sensitive framework.

ANNEX

Summary SA-CCR Potential Impact, Industry Concerns and Suggestions

SA-CCR Area	Industry Concerns	Potential Impacts	Industry Suggestions
General SA-CCR design and calibration	SA-CCR is conservatively designed and calibrated and is likely to result in significant increases in exposures and capital requirements.	SA-CCR EAD is equivalent to 2.5x IMM EAD, and 2.3x CEM EAD for the BCBS RCAP netting set (NS) 16*, which includes IR, FX, equity trades.	SA-CCR would greatly benefit from simple modifications improving its risk sensitivity and calibration.
1. Alpha factor usage and calibration	The conservative 1.4x Alpha does not apply to the standardized and already conservative SA-CCR. Alpha was set in 2003 using industry estimates, and no longer reflects current market, regulatory environments.	The 1.4x Alpha factor overstates EADs by 40%. This is overly conservative, particularly in the case of RC, which typically reflects actual MtM levels of unmargined end user trades.	The usage and calibration of Alpha should be revisited to better reflect current market and regulatory environments. Alpha value is 1.01x when assuming 1,500 counterparties and 10 orthogonal risk factors.
2. Initial Margin (IM) recognition	The degree of exposure reduction resulting from the exchange of IM is too low and not sufficiently aligned with the actual level of risk mitigation provided by IM.	For NS with large Independent Amounts, SA-CCR EADs are 10x-11x IMM EADs, CEM EADs, when IMM and CEM EADs are not actually fully extinguished**	SA-CCR's PFE multiplier should be made more sensitive to over collateralization and negative MTM.
3. Multiple CSAs in a single netting set, and vice versa	SA-CCR requires banks to divide a netting set into sub-netting sets in these instances, in order to align with the margin agreements, thereby reducing netting.	When splitting NS 16 into two groups (odd/even numbered trades) SA-CCR EAD increases by 42%*.	Simple modifications would address this modelling issue while still respecting legal agreements.
4.a. Diversification across IR hedging sets, FX hedging sets 4.b. FX netting issue	a. No recognition of diversification across IR hedging sets, FX hedging sets, is overly conservative and risk insensitive, overstating counterparty credit risk. b. SA-CCR does not allow for the netting of cash flows in each currency to a single net amount, e.g. for FX crosses and FX triangulation.	For NS 5*, all IR, SA-CCR EAD is 23% higher than IMM EAD, and 2x the CEM EAD. For an example NS with strong negative MtM, SA-CCR EAD can be a large multiple of IMM EAD. For NS 8*, all FX, SA-CCR EAD is 2.5x IMM EAD, and 3x CEM EAD.	a. SA-CCR should allow for diversification across IR hedging sets, FX hedging sets. b. SA-CCR should allow the netting of cash flows in each currency to a single net amount.
5. Options Delta Calculation	SA-CCR's options delta calculation approach is operationally challenging, and unsuitable for negative IR, American and Bermudan options.	SA-CCR deltas misaligned with banks' own deltas, disconnecting capital from actual risk and discouraging hedging.	Allow banks to use their own model deltas, better aligned with actual risk and suited to negative rates and Am., Berm, options.
6. Supervisory factors (SF) for IR, equities	A single IR SF for all currencies does not represent very different levels of IR risks. Equities SFs are overstated.	For NS 13*, all equities, SA-CCR EAD is 2x IMM EAD, as well as 2x CEM EAD.	IR SF should be more granular, and equities SF should be lower, more proportionate.
7. SA-CCR's collateral haircut approach	SA-CCR's simplistic haircut approach ignores other collateral, trade population, and diversification.	The current approach lacks risk sensitivity and hence disconnects capital from actual level of risk .	SA-CCR should incorporate the impact of the future volatility of collateral into PFE.

*ISDA QIS Results using BCBS RCAP Netting Sets, unmargined **ISDA QIS Results using BCBS RCAP Netting Sets 19, 22, 25

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