

Margin rules for non-centrally cleared derivatives, SIMM & MVA.

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Overview

This whitepaper covers the advent of the margin rules for non-centrally cleared derivatives. It describes how the requirements are being implemented through SIMM, comments on quantifying the costs through MVA, and explains how Bloomberg's implementation of SIMM and MVA can help in the transition to the new regime.

Background

In March 2015, the Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO) published the final policy framework that established the minimum standards for margin requirements for non-centrally cleared derivatives. The BCBS and IOSCO had both agreed on the terms of the framework and implementation was scheduled to launch in September 2016, beginning in Phase 1 with the entities that had the largest aggregate month-end average notional amounts (AANA) of non-centrally cleared derivatives, passing through four more phases of successively lower notionals, and concluding in September 2020 with entities exceeding \$8 billion in AANA.

Implementation phases for the margin requirements for non-centrally cleared derivatives

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Sept. 1, 2016	Sept. 1, 2017	Sept. 1, 2018	Sept. 1, 2019	Sept. 1, 2020

Covered entities where the aggregate average notional amount of non-centrally cleared derivatives is in excess of:

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
> \$3 trillion	> \$2.25 trillion	> \$1.5 trillion	> 0.75 trillion	> \$8 billion

Source: BIS, March 2015.

The objectives of the initiative are focused on the reduction of systemic risk and the promotion of central clearing, which is becoming mandatory for most standardized derivatives in many jurisdictions. The authorities have advised that the framework requires a significant amount of preparation and will impose new costs on market participants. As the rules have gone into effect starting in September 2016 for the Phase 1 entities, organizations have worked to develop methodologies for initial margin calculation in this emerging regulatory environment.

¹ See "Margin Requirements for Non-Centrally Cleared Derivatives," Basel Committee on Banking Supervision (Bank for International Settlements) and Board of the International Organization of Securities Commissions, March 2015. <https://www.bis.org/bcbs/publ/d317.htm>.

Initial margin

Initial margin (IM) is a form of collateral that is collected and/or posted to reduce future exposure to a counterparty due to derivatives trading. For exchange-traded and cleared derivatives, the process is well-established. However, for non-centrally cleared derivatives, this has been relatively new terrain.

The specific requirements for posting of IM under the BCBS-IOSCO rules include the following eight points²:

1. Appropriate margining practices should be in place with respect to all derivatives transactions that are not cleared by CCPs.
2. All financial firms and systemically important non-financial entities ("covered entities") that engage in non-centrally cleared derivatives must exchange initial and variation margin as appropriate to the counterparty risks posed by such transactions.
3. The methodologies for calculating initial and variation margin that serve as the baseline for margin collected from a counterparty should (i) be consistent across entities covered by the requirements and reflect the potential future exposure (initial margin) and current exposure (variation margin) associated with the portfolio of non-centrally cleared derivatives in question; and (ii) ensure that all counterparty risk exposures are fully covered with a high degree of confidence.
4. To ensure that assets collected as collateral for initial and variation margin purposes can be liquidated in a reasonable amount of time to generate proceeds that could sufficiently protect collecting entities covered by the requirements from losses on non-centrally cleared derivatives in the event of a counterparty default, these assets should be highly liquid and should, after accounting for an appropriate haircut, be able to hold their value in a time of financial stress.
5. Initial margin should be exchanged by both parties, without netting of amounts collected by each party (i.e., on a gross basis), and held in such a way as to ensure that (i) the margin collected is immediately available to the collecting party in the event of the counterparty's default; and (ii) the collected margin must be subject to arrangements that fully protect the posting party to the extent possible under applicable law in the event that the collecting party enters bankruptcy.
6. Transactions between a firm and its affiliates should be subject to appropriate regulation in a manner consistent with each jurisdiction's legal and regulatory framework.

7. Regulatory regimes should interact so as to result in sufficiently consistent and non-duplicative regulatory margin requirements for non-centrally cleared derivatives across jurisdictions.
8. Margin requirements should be phased in over an appropriate period of time to ensure that the transition costs associated with the new framework can be appropriately managed. Regulators should undertake a coordinated review of the margin standards once the requirements are in place and functioning to assess the overall efficacy of the standards and to ensure harmonization across national jurisdictions as well as across related regulatory initiatives.

As we enter Phases 4 and 5 in 2019 and 2020 respectively, a substantial number of smaller market participants will be affected and the need for effective solutions is front and center.

In an effort to help the industry meet these IM requirements, as firms approach the time for their own implementation, they should identify the in-scope entities early, make prompt disclosure to and exchange information on compliance with counterparties, and determine special cases. It is also essential for firms to build capacity for compliance ahead of time, including provisions for selecting and preparing the methodology, mapping of internal data inputs, conducting portfolio matching test calculations with counterparties, and obtaining regulatory approval for use of the chosen model – a process that involves back testing and model validation³.

The impact on the market will entail a number of impacts on collateral processing including a) daily exchange of variation margin, b) initial margin calculations, c) margin call statements, d) collateral eligibility, e) initial margin segregation, and f) settlement windows (on a T+1 basis).

One critical feature of the IM provisioning is that this collateral cannot be rehypothecated, and will have an impact on the total amount of collateral available and on liquidity, both within the firms and across the market as a whole.

On the collateral management side, Initial Margin differs from Variation Margin (VM) in that VM is typically a bilateral, cash settlement process, while IM is based on securities and entails third-party agents for collateral allocation.

² BCBS and IOSCO, March 2015.

³ "Getting Ready for Initial Margin (IM) Regulatory Requirements: What Steps Do I Need to Take?" ISDA, 2018. <https://www.isda.org/2018/04/16/getting-ready-for-initial-margin-the-steps-to-take/>

The SIMM

As the financial services industry embarks on this new era of regulatory requirements, one of the critical decisions for individual firms revolves around the choice of a calculation methodology. ISDA has developed a Standard Initial Margin Model (SIMM) to assist in the process of implementation. As smaller banks, buy side firms, commercial users, and other market participants are drawn in during Phases 4 and 5, the SIMM, which has become the effective market standard for IM calculation, will be increasingly important to them.

From the outset, preparing for use of the SIMM entails an intensive effort around data management processes that will intersect with the IM evaluation itself and the overall framework for compliance. If we consider the process of settling IM calls on a daily basis, we will find a three-step process: sensitivities generation, IM calculation, and IM call processing. A wide range of products must be covered, which makes the sensitivity generation a complex task. Although there is an exposure threshold currently in place, the industry has been discussing the likelihood that many of the Phase 4 and Phase 5 firms will not end up posting margin due to the magnitude of that threshold. The industry and the ISDA have proposed that the AANA threshold be increased, since the compliance burden weighing on the Phase 5 firms in particular arguably outweighs the level of systemic risk they pose to the industry as a whole⁴. It is not expected, however, that any such change to the threshold will be agreed to by the regulators.

The platform that handles this task must be able to model data from the CSA agreements, accommodate very specific products, create output for various kinds of sensitivities, and classify the sensitivities appropriately according to the SIMM rules. Further, the results must be formatted properly (e.g. the ISDA Common Risk Interchange Format). Other key functions include reconciliation and disputes, curve construction, and back testing methodologies.

The SIMM is a simple, straightforward model that allows firms to calculate their initial margin based on a prescribed set of sensitivities. Although the SIMM calculation is easy, getting the inputs to SIMM may not be so simple. Firms must have a robust greeks engine for input in accordance with ISDA SIMM specifications for format or the CRIF, common risk interchange format.

Bloomberg has licensed the SIMM methodology from ISDA and is providing solutions for single-security, portfolio, and collateral management work flows, leveraging the Bloomberg Terminal[®]'s suite of derivatives functionality, including the Multi-Asset Risk System (MARS).

In the Bloomberg SIMM implementation, the greeks are calculated through the SHOC infrastructure and derivative deals are priced and repriced at current and at shifted market (data) prices, respectively. This generates an instantaneous scenario where the relevant SIMM factors are shifted one at a time to observe the change in deal price. This manual shock process produces a discretized estimate of the greeks, rather than the theoretical calculus derivative greek value, and it is consistent with ISDA SIMM.

In terms of collateral management, the essential tasks range from legal documentation and margin workflow to in-system reconciliation, SIMM, and portfolio margin calculations. Within the Multi-Asset Risk System (MARS), LEDO (Bloomberg's Legal Entity and Document Manager), which allows users to enter and monitor the terms and conditions of their legal collateral agreements (e.g., CSAs). In MARS, the SIMM output appears as a margin event in the Collateral Management Workflow tool, BCOL <GO>, which provides for deeper analysis of the calculation.

⁴ See, for example, the ISDA Quarterly, Vol. 5, Issue 1, January 2019: <https://www.isda.org/a/PrMME/IQ-ISDA-Quarterly-January-2019.pdf>

Quantifying the cost of IM posting over the life of a portfolio via MVA.

As firms come to grips with the implementation of IM posting and SIMM specifically, they are also evaluating the effect of IM on the cost of trading. Quantifying these costs clearly can play a role in pre-trade decisions, including the choice of counterparty, and the size and/or timing of trades. The existing valuation adjustments (XVAs) are being extended to encompass the effects of IM in the Margin Value Adjustment (MVA). While MVA is not yet commonly charged upfront by market participants, its impact is being actively quantified and various calculation approaches have been proposed. As more firms reach the compliance thresholds for IM posting, addressing these costs will become increasingly important across the industry.

MVA calculations are performed using Monte Carlo simulations consistent with the other derivative valuations (XVAs). Some of the technical challenges in implementing an MVA calculation specifically involve the requirement to project Initial Margin balances forward in time. In particular, calculating SIMM within the context of an XVA simulation requires pathwise computation of trade sensitivities, which may be computationally intensive. For this reason many participants have implemented approximation approaches, varying from regression-based techniques to simpler models that normalize to SIMM at various points in time within the simulation.

Bloomberg's MARS XVA product calculates a full set of XVA metrics for counterparty risk and funding, and now includes an MVA based on SIMM. MARS XVA clients can access their SIMM calculated IM amounts directly from their BCOL collateral portfolios and use these as the input to MVA calculations on their portfolios, both pre- and post-trade.

Conclusion

Clearly, the benefits of having an integrated solution that can capture both the operational aspects of SIMM and the calculation of the associated MVA costs will make a complex task easier. This is especially valuable in a situation where inputs are required across several departments, from the front office to risk, operations, and legal, with varying systems and capabilities across the organization.

Bloomberg has implemented the SIMM methodology in line with ISDA guidelines as set out in the ISDA SIMM Methodology documents that can be found on the ISDA website – www2.isda.org/functional-areas/wgmr-implementation/.

Additional information can be found on the following links:

- Learn more about Bloomberg's SIMM solutions on the Terminal via SIMM <GO>.
- Get a complete picture of Bloomberg's Multi-Asset Risk System offering on the Terminal via RISK <GO>.
- Contact us at riskinfo@bloomberg.net.

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