Are you faced with Initial Margin Calculation Challenges?

Uncleared Margin Rules can bring entities into scope to exchange initial margin. Preparation for this includes preparing systems, workflow processes, documentation, and custodial relationships.

A key element in this journey is how to calculate Initial Margin and deciding which calculation method to use. There are two approaches:

1. Regulator approved quantitative model, such as the ISDA Standard Initial Margin Model (ISDA SIMM™ or SIMM)
2. Standardized grid or schedule provided by the respective regulator

Using a model or a grid, it is worth considering the following pros and cons for each approach.

SIMM provides the following benefits to its users:

- SIMM is a risk-sensitive model and uses portfolio sensitivities as its inputs. It is a more accurate reflection of the risk inherent in a portfolio, and is faithfully able to recognize netting, hedging and diversification benefits, but is limited to do so only within broad product classes by the stipulation of the regulations.
- It is easy to replicate calculations performed by a counterparty given the same trade population. This is because of the standards in place, both for the methodology and the inputs derived from the trade population. The SIMM methodology is a standard defined by ISDA and the industry and is published. The Common Risk Interchange Format (CRIF) is the standard format used to input risk sensitivities to SIMM. These inputs are determined by firms using the clearly defined standards in the SIMM methodology.
- The hierarchical structure of SIMM allows SIMM users access the drivers of the calculation at all levels of aggregation in order to speedily detect the drivers for discrepancies between counterparties during reconciliation
- The SIMM calculation can be performed within a few seconds irrespective of the complexity of the existing trades within the regulatory margin portfolio
- SIMM is easily extensible and stable to the addition of new risk factors

Under the US rules, swap dealers are required to have prudential-style governance in place for quantitative models such as SIMM. Re-calibration, backtesting and ongoing maintenance are some of the processes necessary to meet these requirements. These processes demand a reasonable operational cost from the industry, SIMM users and the regulators. It is worth highlighting that under the US rules, these prudential-style governance requirements do not extend to non-swap dealers.

The Grid provides the following benefits to its users:

- It is a simpler and less-risk sensitive approach to initial margin calculations
- It provides an option to calculate initial margin for market participants who may choose not to develop and maintain a quantitative model, and may be unwilling to rely on third parties to perform the IM calculations

It is worth highlighting that:

- Grid users may find it more difficult to replicate and reconcile with their counterparty's initial margin for the same trade population. This may be due to differences in the inputs. To elaborate more on this point, it is useful to consider that for certain product types, such as those with accreting or amortizing notionals, bilateral counterparties may have disagreements on the notionals to use as inputs because firms may have different viable approaches to select notionals for these product types. Also, given that trade market values are inputs to the net-to-gross ratio element of grid calculations, differences in the parties' trade valuations could lead to differences in IM calculations. Consequently valuation discrepancies could impact initial margin (as well as variation margin) reconciliations.
- Although the grid is able to recognize netting, hedging and diversification benefits across broad product classes, it is not as accurate as SIMM given it is a less-risk sensitive method; and these benefits can only be applied to 60% of the gross IM amount.
- ISDA has observed that generally the initial margin determined using grid is more conservative than that calculated using SIMM.

From these highlighted benefits and disadvantages across both SIMM and Grid, we can further highlight that SIMM is widely used by the firms which became subject to regulatory IM in Phases 1, 2, 3, and 4 because:

- SIMM presents a simplified risk-based model that recognizes offsetting risks within broad product classes but not across.

- Use of a common standardized model between trading counterparties minimizes, and helps to quickly resolve, margin disputes.

- SIMM allows market participants greater ability to predict liquidity requirements.

- SIMM is well known to regulators (who must often approve internal models) and has been enhanced since its early adoption.

- While firms often have enterprise risk systems or capital models, they are largely unsuited for daily margining. They may be too complex for operational needs (such as reconciliation) or too computationally burdensome to meet daily margin call deadlines.

- SIMM's transparency allows for timely identification of calculation discrepancies.

- The support environment for SIMM, including messaging formats, middleware services, and governance structures, are well-established.

The grid methodology can seem simpler than SIMM because margin is based on percentage of notional by product type (and tenor). However, the grid can cause implementation issues when applying netting sets and also percentages to notional amounts for products which may have competing product rules. For example, callable or extendable derivatives can range in tenors and products that trade in units vs. notional amounts can also cause challenges. Due to a lack of regulatory clarity, implementation may be inconsistent and margin disputes may have higher occurrences with the grid compared to SIMM.

In either case, the calculation may not be the most complicated part of the process.

Calculation of Initial Margin using SIMM or Grid method requires several steps and considerations to establish a final amount:

- For both the Grid and SIMM methodology:
  - Users will need to identify in-scope transactions for their regulatory margin portfolios.
  - For the in-scope transactions, users will need to classify trades under the broad asset classes of interest rates and foreign exchange, credit, equity and commodity specified under the regulation.
  - For each broad product class, users will need to determine and agree with their counterparty on the use of SIMM or Schedule for the calculation of the applicable initial margin.

- Once the in-scope trades within regulatory margin portfolios are categorized under the broad product classes and a decision on whether SIMM or Schedule will be used for these broad product classes (or a subset of the transactions under these product classes) is made, it is important to tag trades appropriately to highlight these decisions. In addition, these tags should highlight the applicable jurisdiction for each transaction within the regulatory margin portfolio.

- This specific tagging for in scope transactions must be carried out on every trade to ensure the initial margin calculation is done properly. This tagging requires significant development within front office and collateral management systems, and it must be done for both the model and grid use. For example, an equity swap must be tagged properly to account for all necessary risk sensitivities for SIMM, along with every jurisdictional implication. In the case of grid, the transaction must be tagged to ensure notionals, maturity, market values, etc. are determined along with the jurisdictional implications. If an EU counterparty is facing a Japanese counterparty, that specific trade must be calculated using both the EU and Japanese rules, and the trade must be tagged for both jurisdictions

- For Grid, users determine the applicable notionals, maturity and market values for the transactions within their regulatory margin portfolios for which the Grid will be used.

- For SIMM, users calculate sensitivities (i.e., deltas and vegas) for the risk factors relevant for each transaction within the regulatory margin portfolio. This calculation should be done in a manner that is consistent, and follows the specification within the SIMM methodology document. They must then map each of these sensitivities to risk buckets. ISDA provides a "crowdsourcing utility" to enable market participants to map risk factors to risk buckets consistently by using market consensus mappings (e.g., for each credit name or equity issuer). These risk buckets exist within the risk classes and these risk classes are relevant to the product classes.

- Reference data providers can assist in information to perform sensitivities calculations. In addition some vendors can provide services to calculate sensitivities.

- Once the risk factors and sensitivities have been determined for SIMM and the relevant trade data and market values for Grid, these inputs can be applied under the appropriate method to determine a single initial margin movement

- Specifically, firms must provide consistent model inputs for each netting set.

- When regulations apply for multiple jurisdictions, users may calculate the "higher of" margin as a means to ensure they fulfil the requirements of all the applicable regulatory jurisdictions

- Model inputs need to be expressed in consistent and defined data file formats for use by counterparties and middleware providers/vendors. ISDA has defined standardized formats via the Common Risk Interchange Format (CRIF).

ISDA SIMM has been developed with the input of ISDA members, has received regulator approvals around the globe, and it can be implemented and used under the provisions of the license agreement with ISDA. SIMM is a sensitivity based approach that is based on the Federal Reserve's capital model – with modifications that are necessary for calculating initial margin instead of capital.

IM Key Implementation Considerations:

1) SIMM vs. Grid: Consider portfolio makeup, methodology implementation, and maintenance of methodology.
2) Build vs. Vendor: Decide whether to implement yourself or via a licensed SIMM vendor or rely on your counterparty to calculate. Regardless, any firm for which SIMM is used to calculate their regulatory IM must enter into a license agreement with ISDA.
3) Readying the trades:
   a. Carefully tag each trade per the list of attributes necessary.
   b. Tag trades as soon as possible so that testing can be started both internally and with counterparties.
   c. To prioritize documentation for counterparty pairs that are likely to be far below the IM Threshold, confirming the initial margin methodology and output with counterparties should be done promptly.
4) Prepare data for input into calculation model - apply portfolio risk factor sensitivities.
5) Documentation: The ISDA CSA for regulatory IM will need to include reference to the initial margin methodology.
6) Testing: Internal testing and testing with counterparties is necessary to ensure a streamlined implementation. Testing can reduce dispute resolution noise that is likely at time of initial implementation.

7) Getting approval for the quantitative model. Determine whether your regulator(s) require pre-approval for use of an IM model and engage early to understand their requirements. The publically available notes from the NFA (https://www.nfa.futures.org/news/newsNotice.asp?ArticleID=4715) and https://www.nfa.futures.org/members/member-resources/files/transcripts/11-21-16_Webinar_Transcript.pdf)) provide some insight into what regulators may look for during their assessment to grant approval for the use of a quantitative model.

For more information, go to:
ISDA SIMM version 2.2: https://www.isda.org/a/osMTE/ISDA-SIMM-v2.2-PUBLIC.pdf
List of SIMM licensed vendors: https://www.isda.org/2016/09/15/isda-simm-licensed-vendors/
SIMM License Agreement for Phases 5 and beyond: https://www.isda.org/2018/12/19/isda-simm-phase-5-license-agreement/