

ISDA SA Benchmarking

“I have been very impressed with the rapid expansion in scope and number of firms involved in each successive phase of ISDA SA Benchmarking. The time and energy invested by ISDA and the industry working group have helped to maximize the overall value of the exercise. The development of a consistent data model has allowed intermediate results to be shared, and the use of industry surveys provides insight into the variability of key model inputs”

David Phillips, head of traded risk measurement, UK Prudential Regulation Authority

Background

Banks are working to implement the final parts of the Basel III framework, including the Fundamental Review of the Trading Book (FRTB) and revisions to the credit valuation adjustment (CVA) framework.

One of the defining features of these reforms is the greater use of standardized approaches for the calculation of capital. The option to use internal models has been removed altogether from the revised CVA framework, while the FRTB places much greater emphasis on standardized approaches and heavy constraints on the use of internal models.

The sophistication of standardized approaches has been significantly increased so that firms will no longer be using basic formulae to determine their capital requirements. To avoid the standardized approach becoming a blunt instrument that applies a one-size-fits-all methodology, the sensitivity of the new standardized approach is far greater than in previous iterations of the framework.

The transition to this new approach will be a major undertaking. Banks need to interpret the rules to implement the new, more complex standardized model,

but they need to do so in a way that is consistent with their peers around the world. Regulators also want to see consistent implementation so they can accurately compare banks with one another and ensure sufficient capital is being set aside. Banks therefore need a way to benchmark their interpretation and implementation against an industry standard.

To meet this requirement, ISDA used its in-house resources to develop a standardized approach benchmarking initiative, which has grown by demand and now provides highly detailed analysis on more than 100 hypothetical portfolios and three standardized approaches to 70 banks and 20 regulators across 20 countries on four continents. The ability to provide this level and volume of service has been made possible by ISDA's in-house technology platform, Perun™, which is used by participating banks and an increasing number of regulators.

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In 2018, ISDA launched the ISDA SA Benchmarking initiative to enable banks to implement standardized approaches accurately and consistently.

Starting with a pilot group of 15 UK supervised banks and with the support of the Bank of England, ISDA quickly showed the unique value and accuracy of its benchmarking. So far, 70 banks around the world have participated in the initiative.

ISDA SA Benchmarking is underpinned by Perun, a quantitative analysis tool developed by ISDA's in-house analytics team that combines with ISDA's Common Risk Interchange Format (CRIF™) to automate much of the analysis and deliver detailed, customized reports to banks and regulators.

The benchmarking process comprises two components – the unit test and the hypothetical portfolio exercise. The unit test gives banks a prescribed set of input sensitivities and reference data that they run through their standardized approach engine and the results are then compared to ISDA's golden source results, with any differences flagged

for further investigation.

The hypothetical portfolio exercise is a more detailed, time-consuming process in which banks carry out the end-to-end capital calculations with a set of hypothetical trades and then submit them to ISDA for analysis. A final report is prepared at the end of this process to present the results and explain any variance in capital results against the median benchmark capital for each portfolio.

With an initial focus on the FRTB SA, the initiative has expanded to also cover the standardized approach to counterparty credit risk and the revised CVA framework. Seventy banks, including 23 global systemically important institutions, have so far participated in the exercise. Meanwhile, 20 regulators have used the data to monitor implementation in their jurisdictions and better understand the drivers of any divergence.

ISDA's Role

The benchmarking initiative has evolved quickly from a modest UK-based pilot program in 2018 to a global service that now underpins the effective implementation of Basel III.

ISDA provides analysis of standardized approaches to a level of detail, accuracy and speed that no other institution, association or regulatory agency has achieved.

This has been made possible by ISDA's close collaboration with market participants, coupled with the highly advanced analytics capabilities of its in-house benchmarking technology platform, Perun.

Perun leverages existing standards such as CRIF and enables accurate, automated analysis of complex risk data. Perun was developed from scratch by ISDA's in-house analytics team to support the ISDA SA Benchmarking initiative and enable banks and regulators to properly understand the drivers of any divergence in capital requirements.

Perun is coded in Python and allows users to zoom in on specific data sets for relevant subsets of banks, portfolios or risk types, helping to identify patterns and trends across the results and to quickly categorize any sources of divergence. Perun also calculates standardized capital based on firms' CRIF inputs and allows for easy extraction of charts to populate the reports that are issued as part of the benchmarking process. Perun has contributed significantly to accelerating data consumption for a large number of portfolios from the growing number of participating banks.

Standardized risk data reporting is also critical to the success of benchmarking, and this is made possible by ISDA's CRIF. The standard was originally developed to support the ISDA Standard Initial Margin Model so users could exchange risk data in a common format and quickly explain any differences in their initial margin calculations. Use of the CRIF has been extended to support ISDA SA Benchmarking, ensuring data is submitted to Perun in a standardized format.

Over the past five years, ISDA has developed a highly advanced in-house analytics function within its risk and capital division. Leveraging these quantitative resources through CRIF and Perun has enabled ISDA to develop a unique and

“Without some form of benchmarking, there is definitely a higher operational risk of divergence from industry standards. If a firm were to take a specific interpretation of the rules, it would face significant challenges to identify any deviation from industry consensus and to understand the impact without benchmarking. It is quite clear that implementation needs to be thoroughly tested before the deadline, and using the framework that ISDA has developed and maintained centrally is the most efficient way of doing this.”

Holger van Bargaen, manager, risk methodology, Deutsche Bank

valuable offering to support the effective implementation of the final Basel III reforms across the industry.

Regulators and market participants around the world have recognized the benefits of the benchmarking initiative and the unique value of the analysis it delivers. ISDA has also made Perun available online so that firms can calculate and benchmark the results of their capital calculations independently, and regulators are increasingly using Perun to collect and analyze bank capital and risk input data.

“Being able to compare our results with ISDA's baseline facilitates the effective implementation of our solution, helping firms to comply more quickly.”

Vincent Prado, product management, market and credit risk, Finastra

Vendor Licensing Program

For the many banks around the world that do not operate large trading books, developing, testing and maintaining a standardized model under Basel III would involve disproportionate costs and resources.

A preferable option for many banks is to buy an off-the-shelf solution from a technology vendor, but the need for accurate and consistent use of standardized approaches is no less important when using a third-party solution.

To enable technology providers to deliver a more robust offering to their clients that is consistent with

industry standards and maximize the number of banks that benefit from ISDA's golden source unit test, ISDA has made its unit tests available to vendors to license for use in their own products. Participating vendors are required to certify to ISDA that their software generates outputs that conform to the expected results of the relevant unit tests.

So far, 16 technology vendors have licensed the ISDA SA unit tests:

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|---------------------------|---------------|---------------------------|----------------------------------|
| 1. Acadia | 2. ActiveViam | 3. Adenza | 4. Avera AI (Area 120 at Google) |
| 5. Bloomberg LP | 6. Finastra | 7. FIS | 8. ICE |
| 9. ITS Corp | 10. MathWorks | 11. MSCI | 12. Murex |
| 13. OMNI Risks Management | 14. Opensee | 15. Quantile Technologies | 16. TriOptima |

Additional Resources

- Risk Awards 2022: Innovation in Technology article
bit.ly/3IpyPIX
- Video explanation of Perun™
bit.ly/3JWgsvM
- IQ Magazine article on ISDA SA Benchmarking, February 2021
bit.ly/3LWgdT4

Contact

Panayiotis Dionysopoulos

Head of capital, ISDA
pdionysopoulos@isda.org

Olivier Miart

Head of analytics, ISDA
omiart@isda.org