Risk publications

The state of the XVA space

MVA, pre-trade challenges and more

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Survey report & white paper

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Executive summary

Rather than remaining on the fringes of the derivatives market, valuation adjustments (XVAs) have taken centre stage over the past decade. Since the financial crisis of 2007–08, counterparties have recognised that having a better understanding of XVAs can help them provide more competitive, timely and accurate derivatives pricing – and understand the risks they and others pose when entering into a derivatives contract.

This is particularly important in the capital-constrained world in which the industry now finds itself since the passing of post-crisis regulatory reform, such as Basel III, Dodd-Frank and the second revision of the Markets in Financial Instruments Directive (Mifid II).

While the XVA spotlight first shone on credit valuation adjustment (CVA) following the crisis, margin valuation adjustment (MVA) has emerged in recent years in light of the initial margin (IM) rules that continue to spread to increasingly smaller firms.

In a recent *Risk.net* survey undertaken in partnership with triCalculate on the state of the XVA space, market participants shared how they are grappling with the conceptual and practical challenges of MVA, which XVAs are most important now, and how cloud-based solutions could be beneficial for XVAs.

THE STATE OF THE XVA SPACE SURVEY METHODOLOGY

The state of the XVA space: Cloud computing and the rise of MVA survey was commissioned by NEX TriOptima and conducted by *Risk.net* between May and June 2018, receiving 153 valid responses.

Respondents were drawn from individuals working in risk, compliance, front, middle and back offices at banks, asset managers, insurance firms and brokers.

Results were collated from Europe (40%), US/Americas (36%) and Asia (24%).

MVA

The IM rules require the posting of IM for new over-the-counter (OTC) derivatives trades in bilateral trading relationships. MVA is the expected cost of funding IM all the way to the maturity of the longest trade in the netting set.

Mandatory exchange of regulatory IM is being phased in based on a notional threshold amount, which reduces every September through 2020. The largest firms started exchanging initial margin in September 2016, and as of October 2018 there are 51 entities currently in-scope. The largest group of firms will come into scope in September 2020.

Who is on the MVA bandwagon?

Tom Griffiths, co-chief executive at triCalculate, says: "Many clients we speak to in scope for bilateral IM are already performing some calculation for MVA. Most are conservatively measuring their MVA numbers, but their portfolios of trades in scope are getting larger every day, making the MVA calculation increasingly important to get correct."

Despite the need to calculate and manage margin for a growing number of financial firms, only 37% of survey respondents are actually calculating MVA. The Americas counted for the greatest portion of respondents calculating MVA (42%), while those from Asia-Pacific (27%) were the least. Those from Europe, the Middle East and Africa (Emea) made up the remainder (37%).

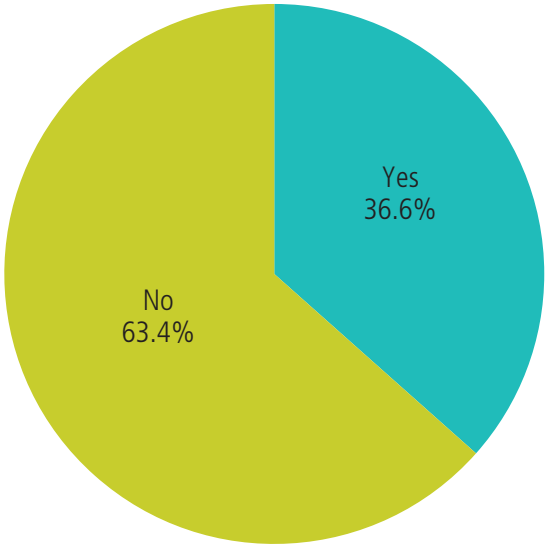
Griffiths says the reasons many market participants have not started calculating MVA is because it can be challenging.

"It's a difficult number to get right. The evolution of MVA is actually very similar to the evolution of many concepts in finance. You start off with a challenge that the industry embraces, and the survey results are a good example of the fact [organisations] now recognise it as a change that is required. So that's the first step: understanding within the market that there's a risk to consider," he says.

"The second step is trying to quantify that risk. Currently, market participants are making preliminary efforts around getting their MVA numbers."
The final step is to get accuracy in those numbers. Griffiths doesn't think the majority of the industry is at that point yet: "We're between the second and third steps right now."

According to survey respondents, the lack of movement on MVA pricing has to do with the fact that many

1 Does your organisation currently calculate MVA?



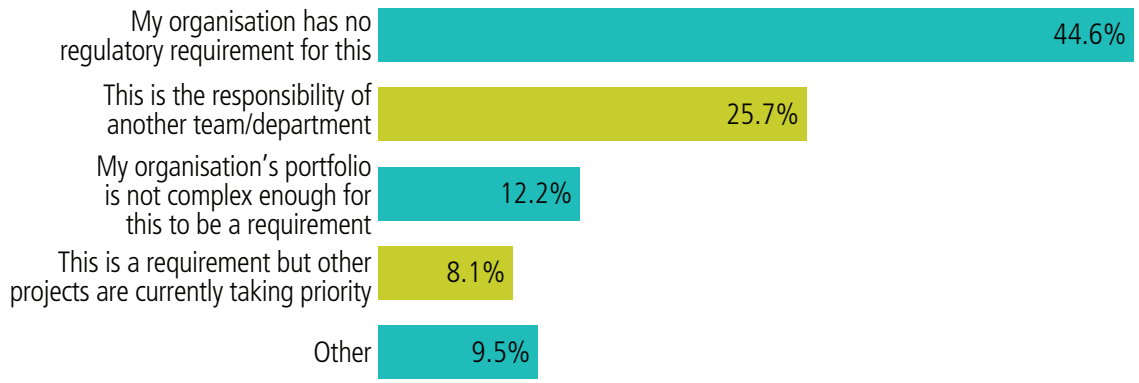
institutions still do not qualify for the IM rules. Nearly half of respondents who do not calculate MVA cited this as a reason, while one-quarter reported it was not the responsibility of their team.

This is also reflected in the demographics of the survey respondents. Those working at Tier 1 banks represented the greatest proportion of respondents (66%) calculating MVA, which aligns with the fact they have been included in the first and second phases of the IM rules. Those working at regional banks represented the second largest group by institution type calculating MVA (21%). The majority of those working at asset managers, hedge funds, brokers, insurance firms or technology companies are not yet calculating MVA, according to the survey results.

It's clear from survey data and client feedback that, even for those that currently calculate MVA, there is not yet a standard way to define or calculate it. One respondent described being "unconvinced that what is currently defined as MVA is well-defined, and that calculating based on current exposures is naive and likely to be overly conservative".

But as more and more institutions come into scope for the margin rules, firms are becoming more comfortable with it, with particular support for including MVA in accounting in accordance with the survey results.

2 If your organisation does not currently calculate MVA, why not?



Simm versus central counterparty (CCP)-MVA

The standard initial margin model (Simm), developed by the International Swaps and Derivatives Association (Isda), helps institutions use a standardised model to calculate the amount of IM they should be posting on non-cleared derivatives transactions.

CCP-MVA – the IM cost associated with trading with CCPs – has become more prominent as more products begin to centrally clear. Isda data reveals that typically more than 80% of the interest rate swaps market is now cleared at a CCP, with credit default swaps closer to 75%.

While recent focus has been on Simm-MVA, CCP-MVA is equally important to survey respondents. Eighteen per cent of total respondents said they currently calculate Simm-MVA, while 19% said they currently calculate CCP-MVA.

In 2018, triCalculate added functionality to CCP-MVA for IM costs associated with trading with CCPs. "We can provide accurate MVA numbers for both bilateral and CCP-cleared portfolios of OTC derivatives," says Griffiths.

The dangers of MVA approximations and the importance of MVA accuracy

Based on his own experience dealing with clients, Griffiths says one of the main reasons for participants avoiding calculating MVA is a lack of the required knowledge and resources.

"There are many computational complexities around MVA. Forward simulation of IM is difficult, and it takes significant compute power to run the Monte Carlo simulations needed for the forward projection. Getting around the compute issues requires new ways of thinking about modelling and technology. For market participants who opt to develop the calculation internally rather than using a vendor solution, they most likely need to spend months developing the calculation, then purchase large amounts of hardware to deal with this challenge," he says.

An inexpensive alternative to building an in-house solution for calculating MVA is to perform proxy calculations, but this is not accurate and can cause mispricing or misinformation on the size of the MVA problem to senior management. Another alternative to an in-house build is a resource- and cost-efficient MVA calculation service such as triCalculate. triCalculate peforms a full Simm recalculation for IM at every point in the simulation, as opposed to using crude approximation. "We can get this level of accuracy because of our sophisticated probability matrix methodology and graphics processing unit hardware," says Griffiths.

But what are the advantages of calculating MVA, and doing it as accurately as possible? Griffiths reiterates that MVA – as with other XVAs – reflects the cost of trading. According to triCalculate's estimates, participants could be missing out on as much as 50% of the cost of a trade through a crude approximation of the MVA calculation or none. Ultimately, a business still has a cost of posting IM.

"If your MVA pricing is 50% off, you will end up charging the client too little because you're making an approximation. This ends up in a loss whether you realise it at the time of trading or not. In other words, that is hard cash that goes out the door unless the MVA is charged to the client in an accurate way," he says.

Charging MVA the correct way also enables firms to trade more optimally. While ostensibly it is a charge on trading, it also incentivises trading desks to behave in a way that can help a firm minimise the amount of IM it posts each day. Accurately quantifying what that true cost of trading is with different counterparties allows a business to have a superior level of confidence in its pricing.

The evolution of MVA adoption

Griffiths thinks adoption will likely be quicker for institutions coming into scope for the margin rules in the coming years given larger banks have already done the hard work in getting set up.

"We get enquiries from clients preparing to come into scope who are very conscious of MVA. It will become something that more and more participants consider as we approach the final phase-in in September 2020. Also, they won't have the delay the dealers had in getting MVA set up right," he says.

"For banks that are still approximating their MVA calculation, new participants coming in-scope of the rules means they will have more counterparties wanting to get the numbers correct, using Simm and CCP-MVA, so this will be an opportunity for them to update their calculation methodologies."

Tom Griffiths, Co-chief executive, triCalculate

What about other XVAs?

Getting around the compute issues requires new ways of thinking about modelling and technology

Despite the acceptance of CVA within the industry, a minority of firms (40%) actually actively manage their CVA positions, according to the survey data. Of the survey respondents that do, more firms in the Americas (43%) are currently actively managing their CVA positions than in Emea (36%) and Asia-Pacific (21%).

The numbers stack up fairly evenly depending on the firm involved. Around 40% of Tier 1 and regional banks actively manage their CVA positions. Only one respondent from an insurance firm said their organisation did this.

A settled landscape

Interestingly, most respondents (54%) are not going to look at any new XVAs in the next 12 months. It is likely the market considers the XVA landscape to be more or less settled, and participants are now looking to get up to speed with XVAs considered standard.

Additionally, the ability to calculate the pre-trade incremental impact of trading activity on XVA is important to the vast majority (91%) of respondents (see figure 3).

Currently, just 40% of survey respondents actively manage their CVA positions but more than 90% consider this important, evidence that there remains work for the industry to do in this area.

Pre-trade XVA in larger firms

Griffiths says many of the concerns related to the ability to price CVA and other XVAs are pre-trade issues. Often a trader is expected to help sales staff price a client trade or portfolio over a long negotiation period. This process could be made more efficient, he says.

"The problem on the pre-trade side is really an infrastructure challenge. Ideally, as many people within sales or structuring teams should have as much access to useful information as possible, and be able to give indications to clients on the charges involved in different trading scenarios," he says.

For example, the trader could add the CVA charge on after the trade has been executed, which may raise issues between salespeople and clients if they haven't flagged the charge earlier in discussion.

More commonly, CVA trading desks are busy managing the risk that sits on their books. They do not have time to sit with salespeople and price many iterations of the same trade to find one that works. By giving sales and structuring teams the ability to check prices themselves pre-deal, resource pain is removed from the trading desk. This allows them to focus on risk management and daily trading processes.

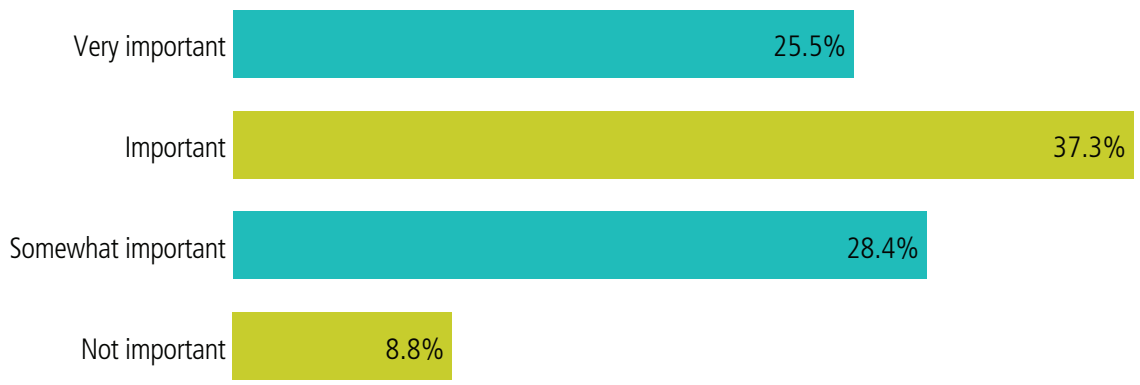
XVA ADOPTION IN TIER 2–3 BANKS

"What we've seen in Tier 2–3 banks is that XVA adoption often starts in the finance team, then goes to the accounts team. The next step is that a mid-office or structuring team will look at it, and then the trading desk. According to the survey results, 40% of respondents have transitioned away from it being just a finance number to something that sits in the front office and is charged for," says Tom Griffiths, co-chief executive at triCalculate.

triCalculate's smaller clients often begin to use its XVA calculation service in a back-office team, then usage makes its way across other parts of the business. One such client began calculating XVAs for accounting purposes, then it was adopted by the finance team. Since then, this client has rolled the tool out to other user groups within the firm.

"An advantage of having an XVA system as a service, as we provide, is that different groups can easily work off the same end-of-day calculations, providing a consistent view on risk and cost. And a web-based service like ours is simple to roll out a to multiple users across a firm. Each user has their own login to our intuitive web GUI – there's no installation necessary and therefore no big project to get up and running," says Griffiths.

3 Is the ability to calculate the pre-trade incremental impact of trading activity on XVA important to your organisation?



Conclusion

The survey results show that the industry has come some way in managing and calculating XVAs, but concerns remain about how businesses are going about this process.

For example, while 37% of respondents say they are calculating MVA (figure 1), the extent to which they are doing a simple, conservative estimate as opposed to a robust, accurate calculation means businesses could be missing out on significant savings. At a time when the portfolio of trades in scope for bilateral IM continues to grow, it's becoming more important to get the numbers right.

Even with more firmly established XVAs such as CVA, there remains a disconnect between how many businesses want to actively manage these positions and how many even have the ability to do so.

Companies can build the technology in-house to perform these calculations, but the cost and resources available to most firms means this is not realistic. However, solutions have emerged to address cost pressures and resource restraints. While cumbersome, static software installations and legacy in-house systems ignore advances in technology that abound in the market, new services have emerged as a more cost- and resource-efficient way of providing market standard XVA calculations.

Within this evolving landscape, the most effective solutions provide XVA analytics as a centralised, cloud-based service rather than as a static software installation. Almost half of respondents (46%) said they would consider using a cloud-based solution for their XVA and valuation needs. triCalculate is a vendor solution unique in operating within a private cloud infrastructure, providing both the data security of an installed solution and the flexibility, scalability and countless other benefits of the cloud.

Though there has been significant progress in the XVA space in recent years, challenges remain. Inconsistencies in approaching XVAs mean there are still questions around which XVAs should be charged, and in what situations. Infrastructure and organisational issues require more accessible, transparent and centralised calculations. Compute limitations around speed and accuracy are giving rise to sophisticated analytics engines. It's clear from the survey results that market participants in today's XVA space need solutions to help them meet current market and regulatory conditions as well as to anticipate and fulfil future requirements.

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of respondents said they would consider using a cloud-based solution for their XVA and valuation needs

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