



# Adaptiv – Get Risk Right

## XVA Data Services



### Introduction

The use of Credit and other Valuation Adjustments (CVA and XVA) is becoming much more widespread in the financial world. What was once the domain of only the largest institutions has now become a necessary part of participating in derivative markets. The challenge for all but the very largest institutions is how to compete in the XVA arms race, without spending huge sums of money on quantitative teams, data modeling and model validation.

FIS offers two services for this purpose:

- XVA Data Services – Providing the data required to run these complex models.
- XVA Calculation Service – A service running the calculations themselves.



### Background

Firstly – what is CVA? CVA is the adjustment you should make to your trade valuations to account for the chance that your trade's counterparty may default before they fulfil their obligations. Other XVAs include:

- Funding valuation adjustment (FVA) – to account for cost of funding
- Capital valuation adjustment (KVA) – to account for cost of capital (primarily credit risk capital)
- Margin valuation adjustment (MVA) – to account for the cost of funding initial margin

All of these costs are real and should be taken into account when pricing new trades. Secondly, it is required under accounting standards (IFRS 13 and FAS 157) to report CVA in as an adjustment to a firm's official valuation.

Before the crisis it was only the largest banks which calculated CVA and KVA, MVAs were almost unheard of. Today financial institutions of all sizes are realizing the importance of this menagerie of adjustments. Over- or under-estimating can lead to either losing business or losing income.



### The Challenges

- Banking has become increasingly globalized – we are seeing large players with significant quantitative expertise increase their presence in local markets. How does a medium-sized bank with less-sophisticated XVA models compete?
- Additionally, accounting adjustments can be reduced by utilizing a simulation model for CVA.
- These models are extremely complex, requiring calibration, validation and troubleshooting by experienced quantitative teams. Costs are extremely constrained in capital markets.

Is there a way to price XVA with a reasonable investment? The answer is yes – with FIS.



### The Calibration

There are two main components to calculating CVA. First, the expected exposure is calculated through a Monte Carlo simulation of all risk factors in the portfolio. Second, the expected exposure is combined with the counterparty's likelihood of default to produce the CVA.

The calibration of the Monte Carlo simulation is the most quantitatively complex task. Firstly, market data is required for this calculation. The calibration should be performed under a "market implied" model – meaning the CVA is priced "at market," using current volatility surfaces. Secondly, the simulation should ensure rates are behaving coherently over the lifetime of the portfolio – as far out as 30 years. Thirdly, the theory must be rigorously justified and documented. Auditors are increasingly focusing on Model Risk Management. Lastly, these calibrations must be maintained and revalidated at each re-calibration, checking if the models are performing as expected and that any CVAs generated are reasonable.

FIS has over 20 years' experience in gathering and calibrating market data for pricing. FIS' Quantitative Engineering team bootstraps FX, Interest Rate and equity volatility surfaces daily and uses these to calibrate our market-implied simulation models. These outputs are used by front offices world wide to price trades and CVA reliably and consistently. Importantly, the model calibrations provided can be used equally for any of the XVA simulations – not only CVA.



### The Credit

The sourcing of credit curves for each counterparty may at first get less attention than the calibration but it is potentially more impactful on the adjustments, will get significant attention from auditors and is complicated by the lack of traded credit products on many legal entities.

FIS addresses this through a credit curve service which accesses traded credit data on names across the globe. Where single names spreads are available, they are provided; and where the entity has no traded credit on the name, a sophisticated methodology utilizing the entity's country, rating and sector is employed to generate a credit spread representative of similar names. This process is rigorously documented and has been employed by financial institutions for many years.



### Support

The FIS Quantitative team is made up quantitative engineers with years of experience in financial markets. Clients can access the team to support internal queries or audit questions, drawing on a rich depth of experience without the overhead of onboarding and maintaining a team of "quants" – one of the most difficult skill sets to find and develop. Lastly, the models are supported by a rich documentation set which can be used to verify models, justify choices – and with the rise of Model Risk Management – demonstrate compliance.



### Let's go!

Getting started with the service is straightforward. For users running FIS' XVA Service, the market data is behind every calculated result, but they need not necessarily see the data unless required for transparency purposes. See the separate factsheet on the XVA Service for more details.

For users running Adaptiv's XVA engine on their own hardware, or even running their own XVA engine, need only stipulate the currencies required and the legal counterparties, and the data is transferred as required by secure transfer to the user site.

FIS' professional services have experience in implementing CVA at dozens of clients and can guide users through any questions or additional services required, ensuring the onboarding of the CVA Data Service is completely seamless.

FIS' powerful Adaptiv solution is ranked first in the industry for a reason. Get in touch today and join our global client base who benefit from FIS' risk services and solutions.