

Reflecting credit and funding adjustments in fair value

Insight into practices

A survey



Contents

Introduction	2
Executive summary	4
Definition of terms	6
Survey results	8
1. Which banks record CVA, DVA or OCA?	8
2. The use of market versus historical data in the calculation of CVA	10
3. Loss given default	11
4. Contingent versus non-contingent bilateral approach	12
5. Collateralized counterparties	14
6. Close-out risk	15
7. Clearing houses	15
8. Wrong-way risk	16
9. Treatment of break clauses	17
10. Regulatory capital and CVA	18
11. Funding cost in the valuation of uncollateralized deals	20
12. How often do banks calculate credit adjustments for most exposures?	22
13. Which banks hedge CVA, DVA or OCA?	24
14. Hedging sovereign risk	28
15. Resources dedicated to CVA management	28
16. Scope and governance of the CVA desk	29
17. Which sources are used to calculate OCA?	31
18. What governance is in place around OCA?	33
How we may be able to help	36
Ernst & Young skills and experience	38
Contacts	39

Introduction

There can be little doubt that determining the fair value of derivatives contracts continues to be one of the key issues for the banking sector in 2012. The continuing financial crisis has led to significant changes in the valuation of derivative contracts, with a number of banks introducing new valuation methodologies over the last two years as assumptions which held true in the pre-crisis era have lost their validity. The new IFRS accounting standard on fair value measurement, and the new charge under Basel III related to valuation adjustments as a result of credit, also mean that institutions have to fundamentally rethink their approach to managing counterparty credit risk.

The fair value question has, of course, been high on the agenda for some time now. In the autumn of 2010, we surveyed a number of financial institutions to identify emerging trends and noted different approaches taken in relation to credit adjustments when determining the fair value of derivative contracts and issued debt instruments.

Following a significant level of interest in our original survey, we are pleased to present this follow-up survey, which we believe offers a deeper insight into crucial industry issues around capital, modeling, risk management and accounting issues.

In this survey, we capture the progress of 19 of the largest, most sophisticated dealing houses applying either IFRS or US GAAP in order to benchmark current practice and key themes for calculating credit and funding adjustments to fair value. The survey questions were selected based on feedback we received from a number of large institutions, and covered areas where these institutions felt that there was a lack of published commentary.

We hope that you find this second survey both insightful and informative. Please do not hesitate to contact us should you have further questions.




Tara Kengla
Head of Financial Accounting
Advisory Services,
Financial Services, EMEIA
+44 207 9513 054
tkengla@uk.ey.com



Dr. Frank De Jonghe
Head of Quantitative
Advisory Services,
Financial Services, EMEIA
+32 2774 9956
frank.de.jonghe@be.ey.com





Executive summary

In the spring of 2012, we surveyed 19 financial institutions, both IFRS and US GAAP reporters, to obtain information on current practices around measuring and managing credit adjustments on derivatives and issued debt instruments.

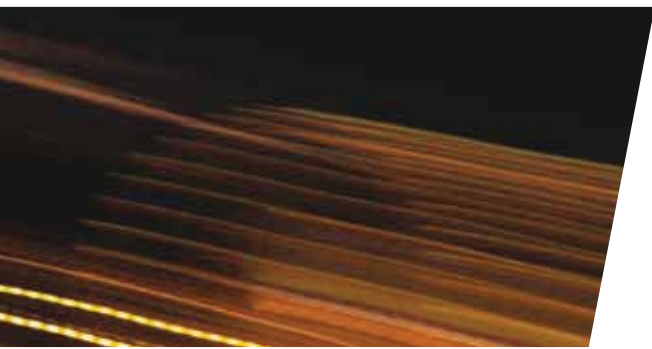
Applying a DVA to derivative liabilities

All survey respondents record both a credit valuation adjustment (CVA) on derivative assets and own credit adjustment (OCA) on liabilities accounted for under the fair value option. However, just 13 record a debit valuation adjustment (DVA) on derivative liabilities. The respondents who do not record a DVA cite a number of reasons for not doing so: the counterintuitive impact of recording a gain in profit or loss as their own creditworthiness deteriorates; the fact that they would likely not be able to 'monetize' or obtain an economic benefit from the own credit gain upon transfer or close out of a derivative liability; the increase in systemic risk that can arise from hedging DVA; and finally, that accounting standards are not explicit in requiring such an adjustment. As a result of the introduction of IFRS 13 *Fair Value Measurement** next year, entities will be required to record a DVA, as it is explicit that own credit must be incorporated into the fair value measurement of a liability based on the concept of an exit price (as opposed to the IAS 39 "settlement price").

Market-observable versus historical or blended credit-risk data

With respect to inputs used to calculate credit adjustments, we noted that some respondents apply historical or blended data to exposures in order to calculate a CVA in spite of the fact that there is a market observable credit spread available at the reporting date. These respondents contend that the use of historical or blended data provides a more appropriate valuation than would be achieved if the market-observable credit spreads were used in the valuation. Determining an IFRS-compliant exit price is a common challenge – derivatives are rarely transferred post-inception, so determining the appropriate price for a subsequent sale is largely hypothetical. There is a concern among these reporting entities that the introduction of IFRS 13 next year and the clear reference to an exit price approach will require them to move to using market-observable credit spreads in the valuations of derivatives and lead to significant volatility in their profit or loss. An IFRS 13-compliant fair value measurement would generally require the use of market-observable credit spreads where they are available.

*IFRS 13 is effective from 1 January 2013 but the standard is not yet endorsed by the EU. The standard is to be applied prospectively.



Funding costs in the fair value of uncollateralized derivatives

The majority of dealing houses have moved to overnight index swap (OIS) discounting for the valuation of collateralized derivatives. However, no such consensus exists for the valuation of uncollateralized derivatives. Just three respondents record a funding valuation adjustment on uncollateralized derivatives, with a further three commenting that they plan to introduce such an adjustment for financial reporting during 2012. Of the respondents who intend to introduce a funding valuation adjustment (FVA) for this year-end, there was no clear consensus on exactly how the adjustment would be calculated. Many respondents noted that they are having internal discussions to determine whether an FVA is compliant with fair value measurement as defined by IFRS and US GAAP, which does not typically permit the use of entity-specific measurements in the fair value of financial instruments. If the price that would be paid/received in a transaction between market participants to novate the derivative would include an adjustment for funding costs, then this should be captured in the fair values reported in the financial statements.

Regulatory capital and CVA

Basel III, which is currently under consultation in Europe and the US and expected to take effect in Europe in January 2013, impacts respondents in a number of ways. Basel III introduces a CVA volatility charge, which is designed to cover potential changes in the value of the firm's accounting CVA. This is, for most respondents, a material additional capital charge, and is driven by regulatory models for exposure and market risk and for selected credit hedges. The accounting measure of CVA, DVA and OCA will also impact the capital position. For these reasons, most respondents feel that Basel III would be a key driver in their considerations for changes to their CVA models and policies. Basel III requirements are also leading most respondents to invest substantially in updating their existing infrastructure to deliver improved capability for exposure measurement and management across risk and front office. As banks address the new regulatory requirements under Basel III, the question arises whether they will try to align certain aspects with accounting going forward.

Managing counterparty credit risk and volatility arising from credit adjustments

The majority of banks in our survey have set up a dedicated function to actively monitor and hedge CVA arising on OTC derivatives, with three of those banks setting up their CVA desks in the last year. Currently, 15 respondents hedge the credit risk component of CVA. Just five respondents hedge the credit risk component of DVA. The majority of respondents said they hedge market risk arising on credit adjustments, i.e., market risk factors that impact their exposure. The respondents who hedge their own credit risk use a variety of methodologies to do so. The proposed CVA Value at Risk (VaR) charge in Basel III encourages active CVA management by recognizing a set of credit hedges as mitigants in the regulatory capital calculations. This is therefore expected to impact the hedging practices of banks.



Definition of terms

Credit risk is defined in IFRS 7 *Financial Instruments: Disclosures* as the risk that a counterparty will fail to discharge a particular obligation.

Non-performance risk as defined by IFRS 13 is the risk that a reporting entity will not fulfill an obligation, which is a definition consistent with US GAAP (ASC 820 *Fair Value Measurements*).

Credit valuation adjustment (CVA) is an adjustment to the measurement of derivative assets to reflect the default risk of the counterparty.

Debit valuation adjustment (DVA) is an adjustment to the measurement of derivative liabilities to reflect the own default risk of the entity.

Funding valuation adjustment (FVA) is the cost of funding considered in the valuation of uncollateralized derivatives.

Own credit adjustment (OCA) is an adjustment made to issued debt instruments designated at fair value to reflect the default risk of the reporting entity.

Fair value is defined in IFRS 13 (as applicable from 1 January 2013) as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (i.e., exit price). This definition is now consistent with US GAAP (ASC 820).

Contingent bilateral CVA/DVA is a bilateral credit adjustment that takes into account the defaults of both counterparties (including joint default) by either modeling the order of defaults or the correlation of default between both parties and applying this to the expected exposure.

Credit break clauses are termination clauses used to mitigate credit risk. Break clauses may be either mandatory or optional. Mandatory break clauses would terminate the transaction on specified future dates prior to the contractual maturity date. Optional break clauses are typically bilateral and give either party the right to terminate the transaction on specified future dates.



Wrong-way risk (WRR) occurs when the exposure to a counterparty or collateral associated with a transaction is adversely correlated with the credit quality of that counterparty.

Close-out risk is the risk that adverse movements occur between the value of the derivatives and the value of the collateral held during the period that it takes to close out exposures against a counterparty in a default situation.

Tail risk is the risk that extreme losses in practice materialize more frequently than suggested by a normal distribution. It is technically defined as a higher-than-expected risk of an investment moving more than three standard deviations away from the mean.

Probability of default (PD) is the probability of default of the counterparty.

Loss given default (LGD) is the amount that one party expects not to recover if the other party defaults.

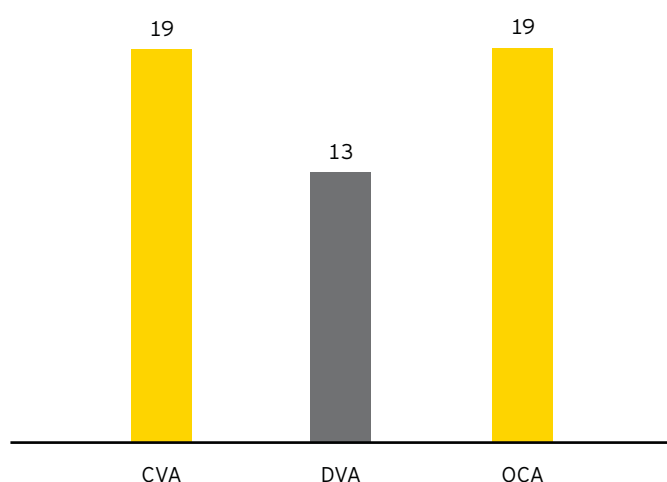
One-way collateral agreements are transactions covered by a one-way credit support annex (CSA), which means that one party is required to post collateral to its counterparty when the value of the trade is in the counterparty's favor, but the counterparty is not required to post collateral in the reverse situation.

Contingent credit default swaps (CCDSs) are CDS contracts where the notional amount of protection bought or sold is fixed when a credit event occurs and is equal to the mark-to-market of a reference derivative transaction on that date.

There is a range of different terms used in the market to reflect some of the above terms. Certain banks use CVA and DVA as defined above, while others refer to them as "asset CVA" and "liability CVA," respectively. The own credit adjustment on liabilities accounted for under the fair value option is sometimes called DVA. While we acknowledge that the above definitions are not necessarily industry standard, they are used throughout this publication for consistency and clarity.

Survey results

1. Which banks record CVA, DVA or OCA?



The credit and liquidity crisis, along with the widening of credit spreads over past years, have highlighted the need for better measurement of counterparty credit risk arising on derivative portfolios. Accounting standards, both IFRS and US GAAP, also make it clear that credit risk should be reflected in the fair value of derivatives. Thus, all banks in the survey record a CVA on derivative portfolios for counterparties with positive expected exposure.

Credit risk on derivative portfolios is one of the most complex risks to measure. There is significant uncertainty around future expected exposure, which depends on a variety of factors, including simulations of underlying market risk factors (rate, foreign exchange, volatility), as well as on the probability of default (PD) and the loss given default (LGD).

CVA is often calculated using the formula: $\text{Exposure} * \text{PD} * \text{LGD}$. However, our survey highlights that there is a range of different methodologies in the marketplace with respect to the calculation of the CVA.

Debit valuation adjustments

Recording a DVA is often seen as leading practice on the basis that the risk of default of the reporting entity should be considered in a fair value measurement just as the counterparty's default risk is. Thirteen banks record a DVA to reflect their own risk of default on their derivative portfolios with a negative expected exposure.



The key issue raised by respondents is monetization. Banks that do not record a DVA argue that DVA is hard to monetize. Therefore, they believe it would not be a relevant component of fair value. They also feel that recording a profit when the credit quality of the bank is decreasing may appear counterintuitive. Finally, managing the resulting volatility of the balance sheet and income statement, for example, by selling protection on a basket of financial institutions, would create systemic risk in the banking system, which is not desirable. Our survey showed a link between recording a DVA, calculating CVA primarily based on market data, and hedging the CVA exposure. All of those banks that do not record a DVA calculate CVA primarily based on historic data, which may result in a lower and less volatile CVA.

The six banks that do not record a DVA are all IFRS applicants. As a result of the introduction of IFRS 13 next year, entities will be required to start recording a DVA. The new standard is explicit that own credit must be incorporated into the fair value measurement of a liability based on the concept of an exit price (as opposed to the IAS 39 “settlement price”). IFRS 13 also states that any liability valuation which does not incorporate own credit is not a fair value measure. Similar to the existing guidance in US GAAP, the standard includes an assumption that the non-performance risk incorporated in the valuation of a liability should reflect a hypothetical transfer price involving a market participant of equal credit standing to the reporting entity on the measurement date. However, the implications of such an assumption on the DVA recorded for derivative liabilities are unclear to some constituents who believe this concept may conflict with the requirement to consider the exit price in the principal market for the derivative liability. If the market participants for over-the-counter (OTC) derivatives are assumed to be dealers, these constituents question how non-performance risk can be assumed to remain unchanged in such situations when the reporting entity is below investment grade, as dealers with the same level of non-performance risk likely do not exist. Notwithstanding these concerns, the application of this guidance under US GAAP has resulted in a generally consistent view on the need to incorporate the effect of own credit risk in the fair value of derivative liabilities.

Recording an OCA, a standard practice

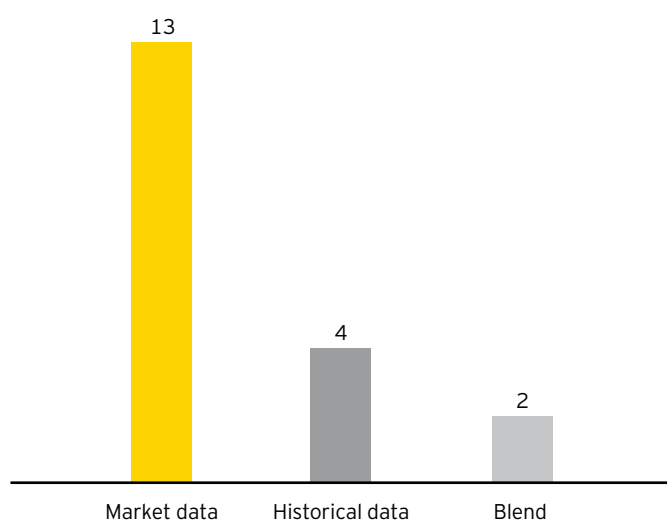
OCA is the adjustment made to issued debt instruments accounted for under the fair value option to reflect the default risk of the entity. All entities in the panel record an OCA; this is attributable mainly to the clarity of both IFRS and US GAAP requirements.

As a result of widening credit spreads over the past two years, and the variability in these spreads, the own credit adjustment on issued debt generates significant volatility in the income statement. In section 17, we explore further the sources used to measure own credit on issued debt instruments recorded at fair value, as compared to the sources used to calculate DVA on derivative liabilities.



The magnitude of own credit profits reported by a number of banks has reinforced concerns that some have about the economic relevance of such adjustments. Like DVA, recording a profit as a result of OCA on issued debt, when the credit quality of the bank is deteriorating, may appear counterintuitive. There is also a regulatory requirement to remove the variation of OCA from Tier 1 capital. Under the new accounting standard IFRS 9 *Financial Instruments*, which is expected to be applicable in 2015, IFRS reporters will no longer record OCA in the income statement. Entities will instead record OCA in other comprehensive income (OCI) within shareholders' equity with no subsequent recycling in profit or loss, even if an own credit gain is monetized through the repurchase of own debt. There is no similar proposal under US GAAP.

2. The use of market versus historical data in the calculation of CVA



Measuring probabilities of default can be challenging. However, 13 of the banks in our survey say they use market credit spreads where available. Banks generally use counterparty CDS spreads for counterparties where there is a liquid single name CDS market, or bond spreads.

A significant number of derivative counterparties reported that counterparty-specific market data is not observable. Proxies are therefore used to estimate probabilities of default. They are generally based on the counterparty's credit rating and market data, such as peer counterparties' credit spreads, sector indices and government spreads.

Some banks reported that they also use historical data when determining their CVAs for certain counterparties. Two banks use a blended approach, combining market and historical data, and four banks use primarily historical data, which is generally consistent with their Basel II reporting. These banks argue that, at least for certain counterparties, a historical, partly qualitative approach based on fundamentals, cyclically adjusted, provides a better proxy for counterparty risk than the use of



CDS markets, which are not always sufficiently liquid. These banks also hold the view that CDS markets are synthetic markets that depend on offer and demand and, therefore, tend to overreact and not always be the best indication of the economic probability of default. Given the requirements of IFRS 13, these six banks are preparing for a potential move to a more market-driven methodology for CVA, recording a DVA on derivative liabilities, and amending their hedging policies in the near future.

3. Loss given default (LGD)

Most banks use the standard market convention for LGD (i.e., 60% for senior unsecured claims) when determining credit-related valuation adjustments for their derivative portfolios. This market standard LGD may be overridden to account for counterparty or transaction-specific features such as:

- ▶ A more senior position in the waterfall, particularly with respect to transactions with SPVs
- ▶ Specific emerging-market country risk
- ▶ Collateral offered by leveraged or distressed counterparties
- ▶ Credit enhancement in the form of explicit or implicit letters of support from group companies

Some respondents commented that they adjust LGD, PD or even the full CVA to reflect various factors, such as maturity, credit rating and recovery rates. Broadly speaking, these adjustments fall into two categories: adjustments for actual recorded recovery rates and adjustments for expected default loss.

The first category is used by banks that consider that they have sufficient empirical evidence of actual recovery rates on their derivative portfolios and varies from the publicly available recovery rates published by rating agencies and widely used by the CDS market. As a result, the CVA number is adjusted to reflect this differential in recovery rates.

The second category of adjustments is used by banks that believe that credit default swap spreads are too high compared to expected default loss, particularly for highly rated credits. The banks that use this method cite a number of academic studies to back up this view. As a result, the CDS spreads used in the CVA calculation may be adjusted based on the credit rating of the counterparty and the tenor of the transaction. For instance, for lower-rated counterparties, the CDS spread used is close to the actual market CDS spread, but for higher-rated counterparties, a proportion of the market CDS spread is used.

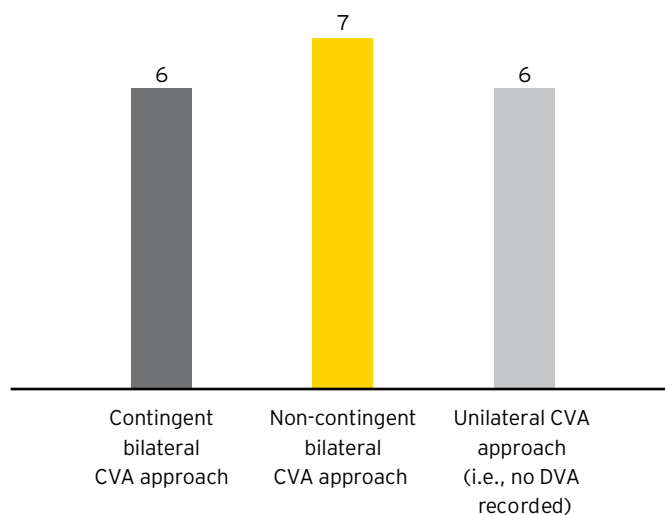
Some respondents tried to substantiate such adjustments by examining where transactions were being priced in the market. However, they were unable to obtain sufficiently robust confirmation of a consistent methodology being used across the market. This is a common challenge for counterparty credit risk, as derivatives are rarely transferred post-inception. This means that determining the appropriate price for a subsequent sale is largely hypothetical. As a consequence, these respondents did not incorporate any adjustments into CVA.



4. Contingent versus non-contingent bilateral approach

The topic of contingent credit adjustments has been debated to date mainly by modeling specialists and seen by some as purely theoretical. But it is now starting to get attention from other specialists, because of the potentially significant impacts on the level of the credit adjustment.

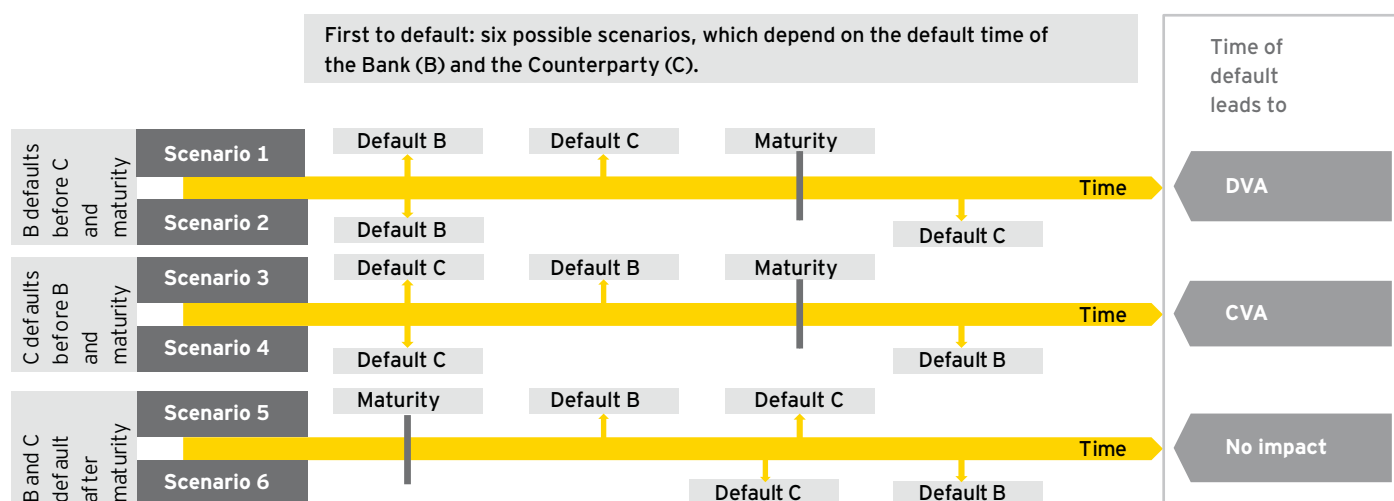
We asked the survey participants whether they use a so-called contingent approach to modeling. The six banks that record a unilateral CVA – i.e., they do not record a DVA – were not asked this question, although they are reflected on the graph below for completeness. The question was discussed with the participants who take a bilateral approach, i.e., they record both CVA and DVA.



Seven of the banks surveyed use a non-contingent approach to calculate credit adjustments, assuming only the probability that the counterparty defaults for calculating CVA and, conversely, only the probability that the bank defaults for calculating DVA.



Six participants record a contingent bilateral CVA approach. In a contingent bilateral approach, an entity takes into account the order of default to calculate the credit exposure. Any of the following six possible scenarios may occur:



The likelihood of each of these scenarios in the simulations is determined by the default probabilities of both the bank and the counterparty, but also by the likelihood of a joint default (default correlation). The latter parameter plays a crucial role in many current credit portfolio models but is notoriously difficult to estimate directly from observable data.

However, several respondents highlighted a potential issue in the contingent bilateral approach. For example, in a scenario where the bank will default before its counterparty (scenario 1 and 2 above), a common practice would be to ignore the possible later default of the counterparty (first to default approach). This would mean that scenario 1, in which the counterparty still defaults before maturity but after the bank itself, giving rise to a contribution to the unilateral CVA, does not contribute a counterparty loss if the bank defaults first. This effect is obviously more significant the higher the default probability of the bank relative to the counterparty.



5. Collateralized counterparties

All banks record CVA on collateralized derivatives unless they are regarded as out of scope. Collateralized derivatives may be regarded as out of scope if the terms of the CSA are sufficiently robust with respect to threshold, minimum transfer amounts, frequency of margin calls, etc.

One-way collateral agreements

Seventeen institutions include derivatives with one-way CSAs in the scope of their CVA calculations. The remaining two told us that they do not do it since they are deemed to be adequately collateralized. Some institutions apply a mixed approach to one-way CSAs depending on the transaction.

One-way collateral agreements have been a significant topic of interest in recent times, as many dealers have large exposures with sovereign, supranational and agency (SSA) clients where the SSA is not required to post collateral to the bank. This means banks have to source funding from elsewhere, and in the event of sharp market moves, this could leave banks with a large funding gap.

As a result of this possible funding gap and the ongoing increased risk arising from sovereign debt crisis in the Eurozone, the costs of one-way collateral agreements have increased for certain sovereign states. This has led to Portugal and Ireland entering into two-way collateral agreements over the past two years. Central counterparty clearing may be another alternative to reduce the increased risks and costs associated with one-way collateral agreements.

Collateral thresholds

A collateral threshold or threshold amount is an unsecured credit exposure that both counterparties to a transaction will accept before they request collateral. Sixteen of the banks in our survey take these thresholds into account when determining their valuation adjustments. However, three banks commented that the threshold was not factored in as it is so low that it is immaterial.

Non-cash collateral

Fourteen respondents consider non-cash collateral as part of the CVA calculation. Of these, eight treat non-cash collateral similarly to cash collateral for CVA calculation purposes. A number of banks told us that high-quality liquid bonds are treated in exactly the same manner as cash collateral, although government bonds treated in this manner are often restricted to a bond issued by the government where the bank's headquarters are domiciled. To the extent that lower-quality bonds are taken, haircuts are typically applied.

Some respondents feel that including physical collateral into the CVA calculation is inappropriate, as physical collateral, such as real estate, may be posted to cover both loans and derivative transactions with the same counterparty. These banks feel that it is too difficult to allocate physical collateral.



6. Close-out risk

Most banks currently consider a 10 day period of risk over which the exposure and collateral values could evolve without further collateral being posted as part of the standard default process. This period covers the time it takes to recognize the default event as well as the decision to act and physically close the positions and liquidate collateral. For some banks, this margin period of risk can be shortened (e.g., five days) or extended to up to a month.

While the majority of participants did not anticipate substantial changes to their practices in the short term, a few are considering amending current practices to reflect a broader set of risks that can be associated with the overall close-out process – for instance, adjusting collateral values further to reflect liquidity risk.

Regulators are introducing changes of their own in Basel III, by including a requirement that exposure be calculated for a period of stressed credit risk, and adjusting the margin period of risk for trades and collateral that could be illiquid in a period of stress.

Basel III also requires banks to increase the current margin period of risk for derivatives from 10 days to up to 20 or 40 days for some trades. This increase is to reflect the potential illiquidity of both trades and collateral, and takes into account aspects such as the number of collateral disputes the bank has had in recent reporting quarters. These changes will impact participants in our survey that are currently using these risk estimates.

As banks address the new regulatory requirements under Basel III, the question arises whether they will bring accounting in line in the future.

7. Clearing houses

The role of the clearing house has increased significantly since the start of the global financial crisis in 2007 and has begun to reform the financial market infrastructure. The centralization of clearing and settlement activities concentrates risk, and while the survey respondents acknowledge these risks, many respondents feel that the strong internal control environment and regulatory oversight at clearing houses is such that these exposures need not be part of the CVA calculation. For some respondents whose transactions settle through clearing houses, the resulting CVA is not material and therefore the exposures are not included in the CVA calculation.

Only four of the institutions surveyed calculate CVA for exposures facing clearing houses, while the remaining 15 do not. Some banks that do not currently include clearing house positions in their CVA calculations are considering doing so in the future. However, this would depend on materiality as well as the number of banks that are admitted to clearing systems.

A few respondents raised the issue that, while default by a clearing house was a remote possibility, the default of one of the clearing members which could potentially require an additional default fund contribution was a greater risk. These banks are evaluating methodologies to measure this risk.



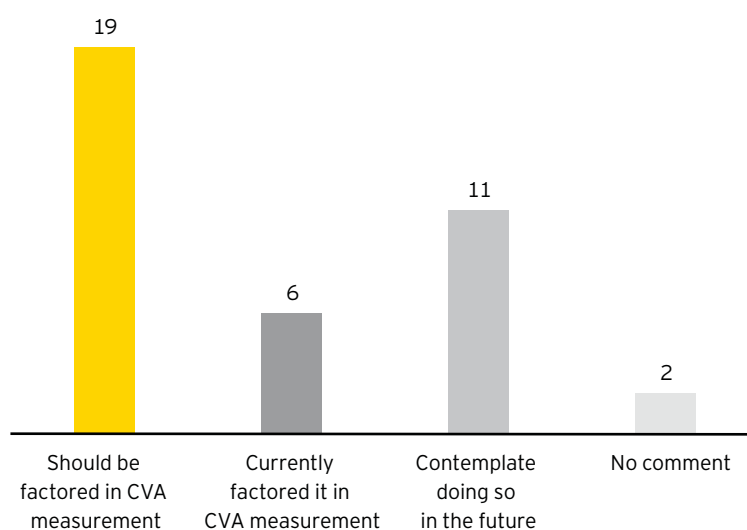
8. Wrong-way risk

A critical issue that has emerged from the financial crisis has been the exposure of the banks to what is called “wrong-way risk.” Wrong-way risk occurs when exposure to a counterparty is adversely correlated with the credit quality of that counterparty.

During the financial crisis, market volatility increased as did exposures from derivatives, while at the same time, concerns were raised about the creditworthiness of different counterparties. Spreads rose sharply, and the CVA accounting adjustments (for the portion of a derivative price that reflects counterparty credit risk) also increased sharply and became a key driver of volatility in the balance sheet and profit or loss of many banks. The magnitude of wrong-way risk depends on the nature of transactions and counterparties involved. Wrong-way risk, as an additional source of risk, is a major concern to both banks and regulators.

Wrong-way risk can be either specific or general. Specific wrong-way risk arises where there is a clear correlation between the credit exposure resulting from a transaction and the creditworthiness of the counterparty, e.g., a CDS transaction where the reference credit is an affiliate of the protection seller. It is not typical for banks to take on specific wrong-way risk trades, apart from as a result of well-defined business needs, and as a result this is largely minimal to banks. Under Basel III, for regulatory purposes, the exposure calculation for specific wrong-way risk trades is also being updated and will reflect the full extent of potential risk. Associated governance, for both identification and ongoing management of this risk, has also been implemented in firms over the last few years.

Treatment of wrong-way risk





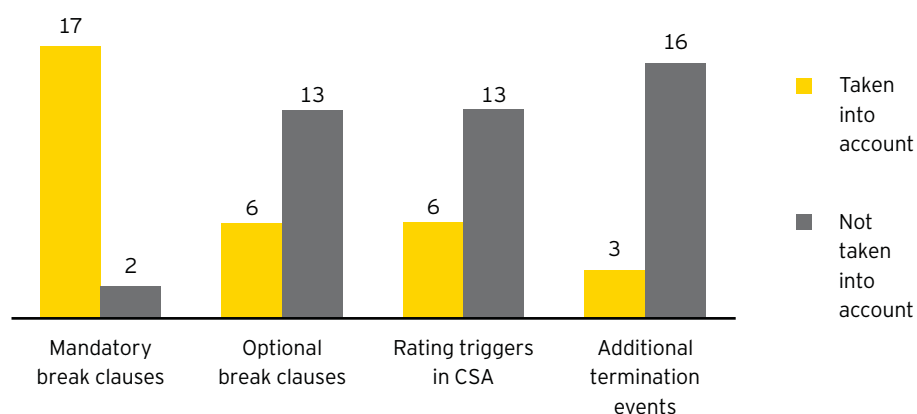
General wrong-way risk arises where a trade exposure and a counterparty's creditworthiness are both impacted by broader adverse correlations. For example, if an emerging-market corporate were to enter into a transaction where it sold the local currency forward and received US dollars, it could be argued that as the local currency devalues and the exposure increases, the creditworthiness of the counterparty could also decline. For general wrong-way risk, most banks have robust pre-trade and risk controls in place. Almost all participants believe that, ideally, wrong-way risk would be reflected in the CVA. Of course, the challenge with general wrong-way risk is that adverse correlation between the exposure and creditworthiness of a counterparty is neither stable nor transparent over time, and matters most in periods of stress when default becomes more likely. Among surveyed banks, a few currently reflect some aspects of general wrong-way risk in their exposure profile by incorporating correlation between risk factors and the counterparty's credit spread, and a few more are updating their models to do so as well. Most participants contemplate doing so in the future. Additionally, almost all participants also make adjustments on particular trades as needed, including calculating a one-off reserve at inception. Such a reserve would typically be based on some stress-testing methodology to reflect potential exposure under a stress situation.

9. Treatment of break clauses

Banks use different forms of break clauses to enable them to terminate the trade with the counterparty under a set of pre-agreed events. A common trigger is a downgrade to the counterparty.

Generally, respondents did not automatically reflect optional break clauses, rating triggers in CSAs and other additional termination events as part of their CVA calculations. Most perform a case-by-case analysis of the economic value of such clauses and, typically, truncate the expected exposure profile to the next break date when break clauses are seen as proper risk mitigants. Banks indicate they are increasingly willing to exercise such clauses in the current environment, despite the potential impact on relationships with clients.

Treatment of break clauses





All banks that calculate a DVA have either a symmetric or a more conservative approach on the DVA side. Where symmetric, the modeling of breaks into the exposure of derivative liabilities would be in line with the modeling for derivative assets. In cases where the exposure modeling is not symmetrical, then the exposure modeling on the liabilities side would be different and could assume that the exposure of the liability continues beyond the break.

Most participants have a hedging policy (when applicable) in line with the accounting treatment of credit break clauses. Thus, they hedge until the same date that expected exposure is simulated for accounting CVA calculation. Whether regulators will accept certain break clauses to be treated as risk mitigants for the calculation of the capital charge on CVA remains uncertain, and is therefore an additional source of concern for banks.

10. Regulatory capital and CVA

Alignment of accounting and regulatory approaches

In 2008 in Europe, Basel II introduced a range of new approaches regarding capital requirements. The most advanced banks obtained approval to use their own models for determining PD and LGD, as well as counterparty credit risk measurement (exposure calculation). Banks that sought and received approval to calculate exposures on derivatives using their own models were often the ones that had implemented CVA measurement and management capabilities early.

Respondents to this survey are at different stages of implementation of CVA, as well as counterparty credit risk measurement and management.

For exposure calculation, established CVA desks had typically developed their own capabilities. As a result, most banks that have both regulatory-approved exposure models (for risk) and mature CVA desks tend to have different approaches and platforms for regulatory and accounting calculations. Most noticeably in these banks, risk models are typically calibrated to historical data, while the CVA desk uses market implied data for pricing purposes.

A few entities, however, have largely aligned exposure calculation methodologies and platforms for risk and CVA management, with differences between regulatory-approved risk models and exposure calculation for CVA only in the way some aspects such as netting and break clauses are reflected. For banks in our survey that have less well established or no active CVA management capability, it is not typical for risk models to be used for exposure calculation. Only a few banks use the regulatory PD and LGD data directly, and when this is the case, it is typically for a subset of counterparties only (e.g., counterparties for which there is no liquid CDS price) or adjusted for some other measures. Most participants use market-implied credit risk information, with internal PDs often used in order to map counterparties that do not have an observable CDS price to a suitable market proxy.

The introduction of Basel III impacts the differences between regulatory and accounting calculations that we note above in a number of ways. Some changes brought about by Basel III would likely be reflected in the regulatory numbers only. Such changes include a requirement that exposure be calculated for a period of stressed credit risk, and



include adjustments to the margin period of risk for trades and collateral that could be illiquid in a period of stress. As noted, it is standard practice for firms to assume that a collateralized trade can be liquidated in 10 days, while Basel III requires firms to increase this to up to 20 or 40 days for some trades.

Basel III also introduces a CVA volatility charge, which is designed to cover potential changes in the value of the bank's accounting CVA. This is for most banks a very material additional capital charge and is driven solely by the bank's regulatory models for exposure and market risk, and the bank's associated credit hedges, rather than the approaches implemented in the CVA desk.

The accounting measure of CVA, DVA and OCA will also impact the bank's capital position. This is why most participants feel that Basel III would be a key driver in their considerations for changes to their CVA models and policies. For instance, as firms develop "CDS proxy mapping" methodologies, they may do so by adapting existing practices in the CVA desk. Basel III requirements are also leading most banks to invest substantially in updating their existing infrastructure to deliver improved capability for exposure measurement and management across risk and front office.

One of the main areas of difference between the accounting and regulatory approaches arises in the treatment of own-credit-related adjustments. While IFRS 13 advocates a symmetrical treatment incorporating counterparty credit risk for derivative assets (CVA) and own credit risk for derivative liabilities (DVA), the current proposals under Basel III take different approaches to CVA and DVA.

The new CVA volatility charge under Basel III has attracted a lot of comment from the industry mainly related to the calibration of this charge, however, market participants by and large accept the need for it. The treatment of DVA under Basel III has proved to be a lot more contentious. Paragraph 75 of the Basel III rules text requires banks to "derecognize in the calculation of Common Equity Tier 1 (CET1), all unrealized gains and losses that have resulted from changes in the fair value of liabilities that are due to changes in the bank's own credit risk." As per the BCBS (Basel Committee on Banking Supervisors) Consultative Document "Application of own credit risk adjustments to derivatives," the Basel Committee recommended that all DVAs for derivatives should be fully deducted in the calculation of CET1 capital. The Committee recognized that this approach is more conservative than paragraph 75, as it results in a CET1 deduction at trade inception equal to the credit risk premium of the bank, rather than the change in the value of the derivative contract occurring as a result of changes in the reporting bank's own credit risk. However, the Committee has chosen this option because it is simple and transparent and ensures that a worsening of creditworthiness does not result in an increase in regulatory capital.

This proposed regulatory approach introduces a significant disconnect between the accounting and regulatory treatment of CVA and DVA.



Backtesting

A key requirement that regulators have when they give banks approval to use their own models for regulatory capital calculation is that they carry out regular backtesting to review the performance of the model's prediction against actual realization. This has been, and remains, a particular area of challenge for banks that have approved exposure models. Indeed, assessing the accuracy of a model that is designed to forecast potential exposures over long periods of time is inherently difficult and raises a number of data and methodological challenges. Both individual risk factors and their combination need to be tested over multiple time horizons. Unlike for market risk where backtesting approaches are now well defined, practices in the industry for the backtesting of approved exposure models are still evolving and this has been a key area of focus for the regulators. While banks would typically have formal validation and testing procedures for models used for regulatory capital purposes, firms that do not use their regulatory models to measure and manage their accounting CVA do not have such formal backtesting processes in place for front-office models.

11. Funding cost in the valuation of uncollateralized deals

Since the start of the financial turmoil, financial markets in Europe and the US have witnessed a widening of credit spreads, and financial institutions have realized the importance of the funding costs embedded in their derivative operations, both in terms of profitability and economic capital.

Prior to the recent financial turmoil, LIBOR was used as the basis of discounting for both collateralized and uncollateralized derivatives. Subsequently many banks have moved away from LIBOR for discounting collateralized derivatives and have instead utilized OIS yield curves, as the latter is a better representation of risk-free rates. LIBOR's status as a proxy for the cost of funding necessary for discounting uncollateralized derivatives has also come under scrutiny, with bank funding now usually at a premium to LIBOR. However, the industry response to this changing dynamic has been less timely and less uniform than for collateralized derivative discounting.

Most banks in the survey acknowledge that LIBOR is no longer an appropriate basis for discounting uncollateralized derivatives. How that funding element should be captured – i.e., the potential need for an FVA, is, however a much more complicated area.

While many institutions commented that funding is priced into derivatives at trade inception, there is generally no subsequent adjustment made to derivative valuations to reflect funding for the purposes of financial reporting. The responses show that just two of the surveyed banks reflect an FVA in their financial statements; however, three more banks are considering reporting FVA in their financial statements this year. Many are waiting to see how market consensus develops during 2012 before they decide whether they follow suit.

While just two participants record an FVA for accounting purposes, there is a general consensus among the remaining 17 banks that funding is as important an element of front-office pricing as credit risk. It is, therefore, our expectation that the number of banks that book an FVA in the near future will increase. The pace of that change and the nature of the evolving market practice remains subject to a number of fundamental questions, which are addressed below.



Accounting aspects of FVA

In theory an FVA is intended to cover a bank's own funding costs for derivative liabilities and its counterparty's funding costs for derivative assets. As both IFRS and US GAAP require the use of exit prices in the valuation of derivative contracts, it could be argued that for derivative liabilities it would be more appropriate to reflect the transferee's cost of funding rather than that of the reporting entity. This conceptual debate has been used by some to reject the move to adopt an FVA. However, as mentioned above, the cost of funding is already built into front-office pricing and, therefore, is a valid part of the economic value of a derivative. As such, banks believe it is reasonable to include its impact in the accounting fair value as well. Many entities analogize the issue around the transfer of derivative liabilities outlined above to the concept in IFRS 13 that own credit must remain the same before and after the transfer of a liability. This argument is based upon the undisputed link between an entity's credit rating and cost of funding.

Double-counting issue with DVA

Assuming that an FVA can be justified in the valuation of derivative contracts for financial reporting purposes, the debate moves on to how it should be calculated. The first hurdle to overcome is the risk of double count with CVA and DVA. Unlike the adoption of OIS-based discounting through changing valuation inputs, it is expected that an FVA would be booked on a portfolio basis in a similar fashion to CVA and DVA. This leads to the potential for double counting. For example, if an FVA is booked on a derivative liability, there is a risk of double count with DVA (as the funding cost will partly reflect the own credit risk of the bank already captured through DVA). The same would apply on the derivative asset side between CVA and FVA.

One approach we have seen emerge is the adoption of FVA through the use of a cash-synthetic spread, i.e., the difference between CDS spreads and bond spreads, as an additional adjustment on top of the CVA and DVA. As an add-on to a pre-existing calculation this approach would avoid the issue of double counting. Some are considering leveraging the IT infrastructure used for the calculation of credit adjustments on derivatives to calculate the FVA based on the same expected exposure profiles, with the same netting rules.

Funding spread in the calculation of FVA

Once the accounting technical and operational aspects have been decided, the last, and potentially most judgmental, consideration is how to calculate the funding spread.

On the liability side, most banks commented that if they introduce an FVA, they would use their own cost of funding. Therefore, in effect, the DVA plus FVA would be equivalent to an own credit adjustment. Given the variability in how banks source their own credit curves, this could cause an interesting dilemma for any bank that uses its CDS curve for own credit.



For simplicity, a number of respondents use or intend to use their own credit cost for the derivative asset side as well – in effect, as a proxy for peer counterparties. If the counterparty has a significantly different funding cost profile, then incremental adjustments may be made to compensate. This approach overcomes the problem of calibrating counterparty's funding costs (an even harder exercise than determining a bank's own funding cost) but has the obvious disadvantage of relying on the equivalency of your own funding cost to your counterparty's.

Therefore, a more technically complete answer would appear to be to use a separate basis for FVA for the derivative assets, for example, using your counterparty's basis between their CDS and bond spreads. However, the more sophisticated the approach, the greater the risk of over complication and, for IFRS reporters, the possibility that the adoption of FVA would introduce an unobservable input, which would impact day one recognition. To balance the need for accuracy with the desire to avoid over-complexity, an average market cost of funding by sector or segment may be used. This would lend itself to a possible market response to this pricing need with the development of new benchmarks.

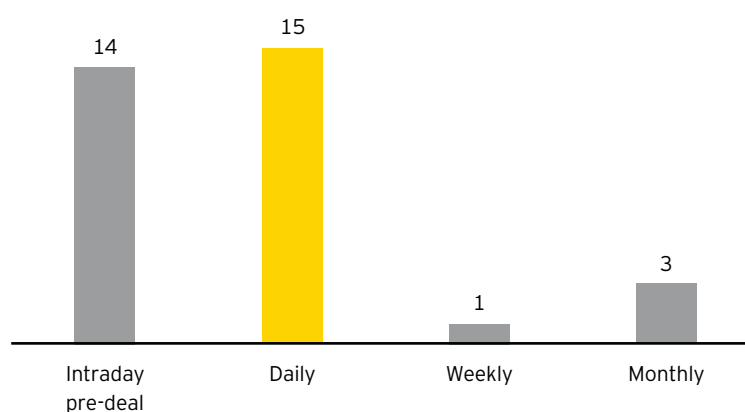
Many of the complexities faced in calculating CVA and DVA would equally apply to FVA and, therefore, may be magnified by the adoption of FVA if they remain unresolved. As such, we expect to see much focus on how a standard FVA methodology will evolve and the more practical problems of how to hedge and risk manage what could become another source of valuation volatility.

12. How often do banks calculate credit adjustments for most exposures?

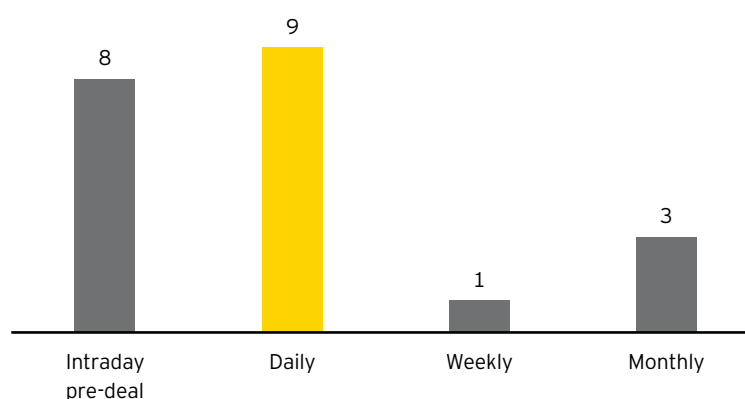
Fifteen respondents price CVA, and DVA when applicable, on a daily basis for most exposures for risk management purposes, and most banks record CVA and DVA on a daily basis. Fourteen banks are also able to calculate a pre-deal CVA on new deals for front-office pricing purposes, often based on simplifying assumptions. This marginal CVA is often used for the upfront credit charge that the CVA desk charges to the primary trading desk. However, banks reported inconsistency in the frequency of credit adjustment measurement across products lines. Producing real-time, accurate numbers, and processing large volumes of data are seen as key computational challenges.



Frequency of CVA calculation

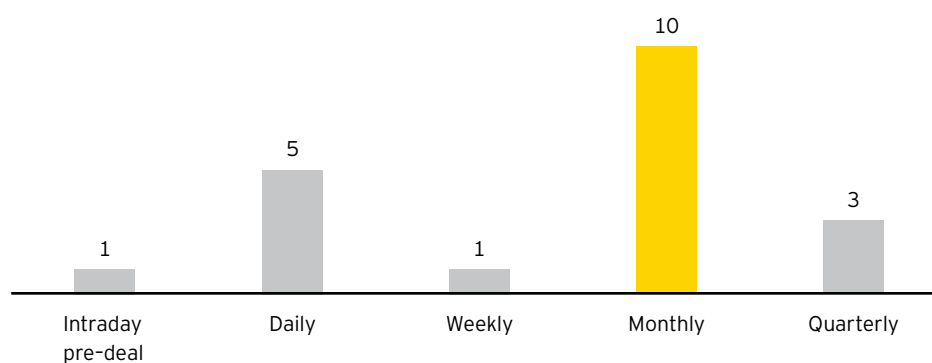


Frequency of DVA calculation



Usually, banks calculate OCA less frequently because they do not manage their own non-performance risk on issued debt and have historically prioritized IT investment on other areas. However, there is a trend to automate their own credit calculation on a daily basis, in line with the increased focus on financial communication around such a significant and volatile adjustment.

Frequency of OCA calculation





13. Which banks hedge CVA, DVA or OCA?

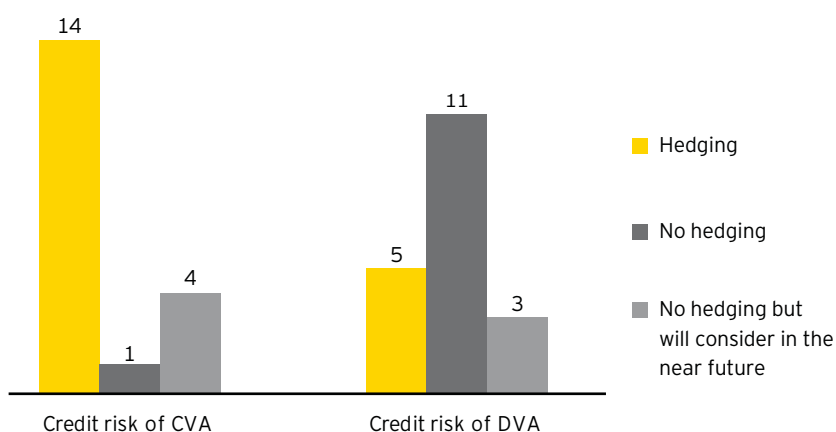
The credit crisis has increased respondents' focus on the increasing volatility of the various fair-value adjustments they report. In many instances the changes in the CVA, DVA or OCA may be one of the largest drivers of the volatility in the quarterly results of large financial institutions. As a result management, shareholders, regulators and other stakeholders are trying to understand the reasons for this volatility and gauge its economic impact. Furthermore, management is thinking actively about stakeholder communication around measurement, management and reporting.

Banks distinguish between the economic risk of the underlying exposures, income statement volatility created by the valuation of these exposures and the appropriate regulatory capital to be held against these exposures. Sometimes these measures converge, but quite often banks may have diverging views on these metrics. The regulatory capital treatment is of course prescribed. Therefore very often we find that banks are focused on hedging strategies to manage economic risks or income statement volatility, but these strategies may not have any impact on regulatory capital calculations.

The proposed CVA VaR charge in Basel III introduces a new charge that could have a significant impact on the regulatory capital required to support the retained credit risk from the derivatives business. Its impact could treble the current counterparty credit risk charge. However, the proposed regulation also encourages active CVA management by recognizing eligible credit hedges as mitigating factors in the regulatory capital calculations. While banks would like to hedge economic risk and reduce income statement volatility, it is expected that the impact of the CVA VaR charge is significant enough to impact the hedging practices of banks – particularly those that are active in the capital markets business and, therefore, can demonstrate that their credit hedges should be recognized as credit risk mitigants for the purposes of calculating the CVA VaR charge.

Banks see effective economic hedging as a key driver of competitiveness in the future. This is highlighted by the fact that 14 of the banks surveyed reported that they are hedging the credit risk component of the CVA. This represents a significant increase in this practice. Four banks reported that they are actively considering hedging the credit risk in the future.

Hedging the credit risk of CVA or DVA

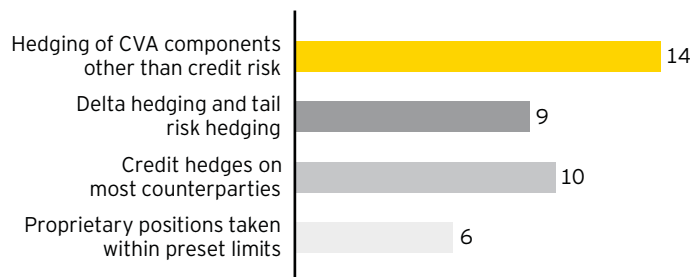




The picture is more mixed when it comes to hedging the credit risk sensitivity of the DVA. A number of banks felt that it was difficult to monetize their own credit spread, and the inability to execute CDS in their own names meant using proxies or indices instead would increase systemic risk across the banking system. Accordingly, only five banks reported hedging the credit component of the DVA. There was a range of methods employed by these banks, which included using the credit sensitivities of CVA and DVA to offset each other, executing CDS hedges on names or indices that could be proxies for their own credit risk, and executing CDS hedges on indices that would not be correlated to their own credit risk. Some firms using the offset approach, i.e., offsetting CVA with DVA and hedging the net result, reported that they would consider switching to a proxy methodology to reduce the tracking error. Some banks believe that it is appropriate to hedge the accounting CVA and DVA because it is the correct measure of economic risk. Other banks believe that the accounting treatment does not truly reflect underlying exposure or risk and, therefore, hedging the income statement volatility would lead to unexpected consequences and drive behavior that was not consistent with mitigating the true underlying risk. This was particularly true of the DVA, where a number of banks feel that the recognition of the DVA in the banks' books is not consistent with the banks' view of economic risk.

Hedged risks

When it comes to hedging the components of the CVA/DVA other than credit risk, there seems to be a greater degree of consensus.



When a bank executes a derivative transaction for, as an example, an interest rate swap (IRS) with a corporate counterparty, the resulting market risk is hedged by the rates trading desk. In addition the transaction gives rise to counterparty credit risk which is captured in the CVA. The CVA also creates a market risk position (in interest rates and interest rate volatility) and a credit risk position. This is because the CVA is sensitive to changes in the underlying interest rates and credit spreads. The interest rate risk created by the CVA at inception will offset some of the risk that the rates trading desk has to hedge. An intuitive way to understand this is as follows: if there is a 10% probability that a counterparty will default, then the bank should only hedge 90% of the interest rate risk. Therefore, if the rates trading desk were to hedge 100% of the interest rate risk, the CVA desk would have to unwind 10% of those hedges. As we move forward, the CVA desk will have to adjust the interest rate and credit risk hedges executed at trade inception to reflect changes in the market.

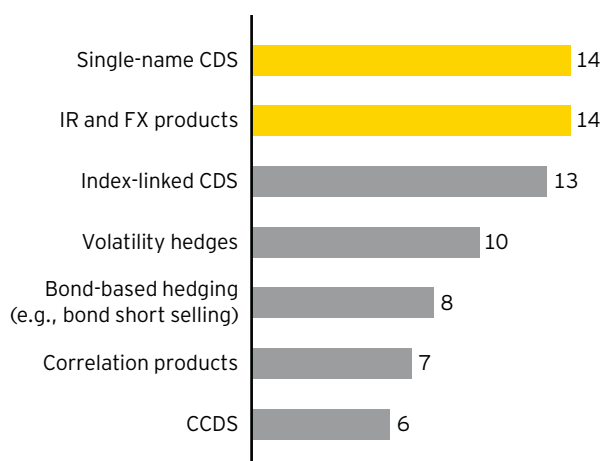


Fourteen of the banks surveyed reported that they hedge the market risk components of either the CVA or DVA, e.g., interest rate risk and/or foreign exchange risk. Where the banks hedge both the CVA and DVA, the market risks are treated as fungible and hedged on a net basis.

Following the credit crisis and the ongoing Eurozone turmoil, more banks seem concerned about tail risk, and this is reflected in the fact that nine banks reported hedging of tail risk as well as delta hedging of CVA/DVA amounts. Hedging of tail risk will typically involve buying options that are out-of-the-money. The market for options on credit spreads is not very liquid, particularly for longer dates. An alternative would be to purchase options on the underlying markets (e.g., interest rate, foreign exchange). By buying out-of-the-money swaptions or foreign exchange options, the bank could protect itself if there was a sudden simultaneous adverse move in markets and credit spreads, or if the liquidity in the CDS market were to dry up completely. The gain on the options would offset some of the losses that the bank would make in such a scenario.

Since it is generally accepted that it is not possible to keep the CVA desk risk positions completely flat, six banks reported that they allow their CVA desks to take proprietary positions within limits.

Instruments used to manage market and credit risk relating to CVA



The CVA and DVA incorporate sensitivities to market risk and credit risk. In addition the CVA and DVA will change as a result of simultaneous moves in the underlying market and credit spreads. The impact resulting from such correlated moves is often described as cross-gamma profit or loss.



Fourteen banks reported that they actively hedge their exposure to risk factors other than credit covering mainly interest rate and foreign exchange risks. The instruments used to hedge the market risk component of CVA tend to be more liquid than those used to hedge the credit component. As a result, most CVA desks will initially hedge market risk and then move on to include credit risk hedges, as the desk becomes more established. Out of the 14 banks hedging market risk of the CVA, 10 reported using volatility hedges typically covering interest rate and foreign exchange volatility instruments such as swap options and FX options.

A majority of respondents reported hedging a significant portion of the credit risk component of the CVA/DVA. Fourteen banks reported using single-name CDS and 13 banks reported using index-linked CDS products to hedge their credit risk. The use of single-name CDS hedges has the added advantage of being effective for CVA VaR charge mitigation where the reference credit is the same as the derivative counterparty. The use of index hedges reflects the maturity, depth and tighter pricing achievable in the index CDS market.

Some banks also reported using instruments other than CDS to hedge credit risk. In particular, eight banks reported using cash bonds for hedging credit risks. This strategy seems to be most commonly used to hedge sovereign exposure when there is insufficient liquidity in the CDS market. Seven banks reported using correlation products as correlation desks start to focus on hedging counterparty credit risk and hedging their CVA.

Finally, six banks use contingent CDS (CCDS); however all of them reported that these are legacy positions and not actively traded products. Given CCDS would be a product that would effectively hedge counterparty credit risk (including correlation risk), this market continues to be hampered by a lack of liquidity and a lack of protection sellers and, therefore, suffers from thin trading and large bid-offer spreads, making it unattractive as a hedge instrument. Market participants have recently agreed on documentation for an index CCDS product hoping to attract non-bank participants to this market to achieve higher volumes, tighter bid-offer spreads and more price transparency.



14. Hedging sovereign risk

Prior to the sovereign debt crisis, it was common to treat sovereigns, supranationals and agencies (SSAs) as risk-free counterparties because the probability of default was deemed to be very low. Accordingly, they were treated as out of scope for the CVA desks, and indeed the banks often had one-way CSAs in place with these counterparties where only the bank was required to post collateral. Credit risk management consisted almost entirely of having appropriate approval procedures in place when the transactions were originated and recording subsequent increases in exposures as a result of market movements for information purposes only.

Counterparties covered in hedging sovereign risk



The banks in our survey reported a change in market practice with respect to exposures to SSAs. Eleven banks reported that the CVA management function now covers these types of counterparties that were previously often out of scope.

The recent events in Greece have clearly removed any perceptions that sovereign counterparties are free from default risk. This has also affected the risk perception for agencies that often carry an explicit or an implicit guarantee from the sovereign. Similarly, the risk appetite of banks for supranationals, which typically issue debt guaranteed jointly and severally by many sovereigns, has been impacted significantly. CVA management practices are currently being updated to recognize, monitor and manage some of these risks.

15. Resources dedicated to CVA management

It is widely recognized that CVA desks have a very difficult task. Unlike other trading desks, the positions of the CVA desk change through time as the underlying derivative markets and credit spreads move. The desk has to respond to these changes rather than put on positions that they think offer them value. Also, the simultaneous movements of market factors and credit spreads can create profit and loss that is very difficult to hedge. Resourcing of CVA desks has therefore been a tricky issue as banks try to deploy staff with the correct skill set. The CVA trading desks will typically need traders, quantitative resources and systems resources to function effectively. Traders tend to have a background in the underlying markets. Quite often, the traders will be functionally divided into teams responsible for managing the market risks in the CVA/DVA, while other traders may focus on the credit component.

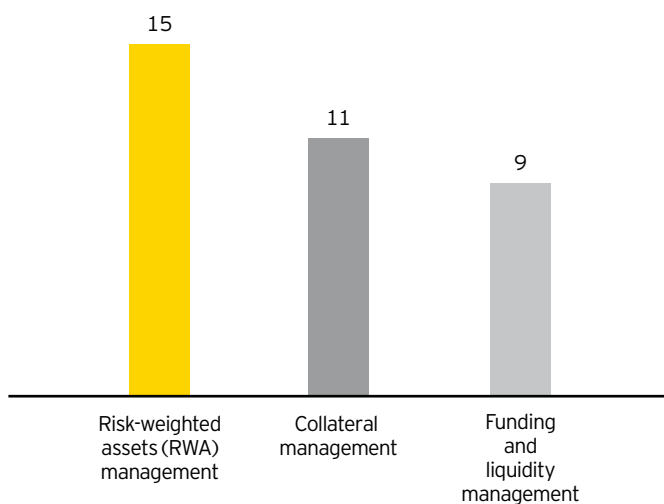
Another key governance area for CVA desks is the extent to which they are set up as an internal cost center and do not have a profit or loss target, or whether they are treated as a trading desk with profit or loss targets. This is often key to driving the expected behavior and attracting people with the appropriate skill set.



16. Scope and governance of the CVA desk

The pricing of derivative transactions has moved from simply discounting a swap curve to a more complicated process that includes; adjustments for counterparty credit spreads; the bank's own credit spread; and adjusting the discounting curve for collateralized trades. CVA desks have been at the forefront of some of the changes in the pricing, risk management and market infrastructure for over-the-counter derivatives.

Functions performed by CVA desk



One of the most significant changes has been a greater focus on the use of collateral since the use and pricing of CSAs has become a critical part of counterparty credit risk management process. Changes to the market infrastructure spurred by the Dodd-Frank Act in the US and the EMIR legislation in Europe have driven more transactions to be collateralized and cleared through central clearing parties. Given the significant impact of collateral on the pricing and risk management of OTC derivatives, we would expect CVA desks to be more actively involved in the collateral management process.

Eleven banks reported that CVA desks have varying degrees of involvement in collateral management. In some firms the CVA desk has full operational control of collateral management while in others they advise on the best way to structure CSAs to mitigate residual risk.



In essence the increased use of collateral also has significant implications for funding and liquidity management for banks. CVA desks could increasingly have to take into account funding and liquidity management as part of their daily processes. Nine banks reported that CVA desks are actively involved in funding and liquidity management for the derivatives business. In some cases this mandate has been extended to the wider investment bank. This has been a key development and shows the extent to which funding and liquidity management has become central to this business as well as how the incorporation of funding in pricing of derivatives is impacting the management of these risks.

Fifteen banks reported that CVA desks are actively involved in risk-weighted assets (RWA) management. This confirms the extent to which regulatory capital constraints have become a significant driver of the derivatives business. Because the CVA desk is often involved from the trade origination stage of the product life cycle, the desks are well positioned to assess the marginal impact of the trades from a RWA perspective and manage the RWA on an ongoing basis. Some banks mentioned looking at the RWA impact of marginal transactions over the lifetime of the transaction instead of on a snapshot basis.

Regulators have mandated that the counterparty credit risk management function has to be effectively supervised. Different approaches may be used in different banks, but a common approach is to have centralized CVA management across all businesses.

Reporting may be into a business head at a senior level, such as the Head of Fixed Income or Head of Investment Banking for example, or there may be a decentralized CVA approach across business lines and/or geographies where each group is allocated the responsibility to manage the CVA/DVA for its own business with a reporting line into the relevant business area.

Centralized CVA management is the model favored by banks, with a centralized loan portfolio management team reporting to an independent risk or financial control function. In this model, the counterparty credit risk originated by each business is aggregated and managed centrally against approved portfolio limits. Risk transfer is effected through internal pricing agreements that attribute a credit and capital charge to the CCR created. The advantages are cost efficiency, corporate consistency, independence and control. The disadvantages are qualitative; for example, it can give rise to perceptions of monopolistic pricing behavior and bureaucratic inflexibility. Senior management must actively moderate potential disputes through continuous consultation and education.

The decentralized model fully allocates the cost of balance sheet and capital usage to each originating business. The advantages are that generally in this model management is more active and innovative in seeking solutions to retained credit risk issues. The disadvantages are the duplication of the CCR management infrastructure across multiple businesses and the corresponding risk and governance issues around maintaining consistent standards.

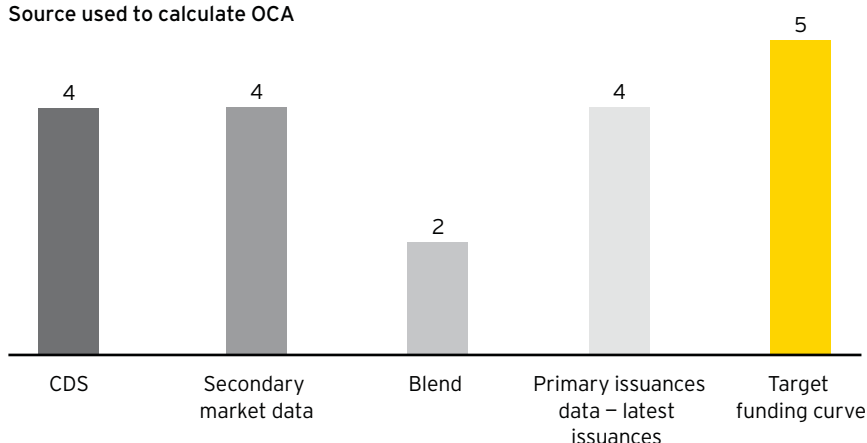


17. Which sources are used to calculate OCA?

As a result of the widening credit spreads over the past two years, and their variability, the own credit adjustment on issued debt generates significant volatility in the income statement of many banks. In this section we explore further the sources used to measure own credit on issued debt instruments recorded at fair value, as compared to the sources used to calculate DVA on derivative liabilities. The magnitude of the OCA reported by a certain number of banks has reinforced questions around the economic relevance of the adjustment.

OCA measurement is a high point of focus for banks as a result of the materiality of the credit adjustment, the volatility in the income statement created and the resulting financial communication challenges.

Source used to calculate OCA



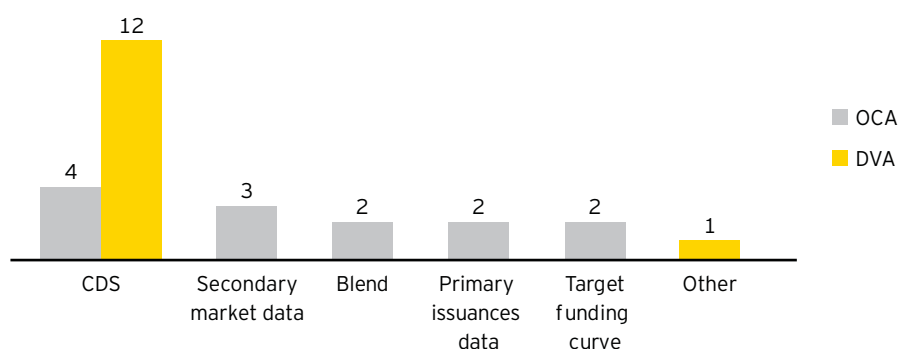
The use of cash curves, i.e., curves other than CDS curves, seems to be increasingly market practice. Thus, 15 banks use cash markets, and since our last survey in autumn 2010, three banks have moved from CDS markets to either primary issuance data or a target funding approach. Some of them argue that CDS markets attract investors different from those who buy debt from banks, which results in different demand and supply mechanisms. For example, these banks believe that CDS spreads are more volatile than bond spreads because they are more impacted by speculative strategies and as such have determined that these synthetic markets are less relevant than cash markets to reflect the actual level of credit spreads on debt.

There is, however, a wide range of methodologies used in the marketplace. Banks use secondary market data, i.e., bond spreads and levels of buybacks, and spreads derived from their latest primary issuances. In so doing they argue that secondary markets may not be active enough to provide them with relevant information on credit spreads for structured liabilities.



A few banks use average issuance spreads observed over a certain period of time prior to the balance sheet date, while some banks use curves set internally by treasury and/or ALM departments to determine the level at which the bank can raise money. These curves reflect the banks' appetite on funding. Some opponents argue that these are less observable. Two banks use a blended approach, combining various sources of data including cash curves and CDS curves.

Do banks use the same credit spreads for DVA and OCA?



Apart from four banks that use their CDS curve for both the DVA and OCA, none of the other 13 banks that record a DVA use the same spread for DVA and OCA. This would be mainly attributable to the funded, long-term nature of issued debt, as well as the lower variability of the related cash flows. Certain participants argue that the OCA on structured liabilities should reflect the bank's own cost of funds, whereas the DVA should only capture the credit risk component, which can be implied by CDS markets when they are liquid enough. Therefore, there seems to be a consensus of consistency between market CVA and DVA methodologies, rather than between DVA and OCA methodologies.

Section 11, which covers funding valuation adjustments on uncollateralized derivatives, also includes a discussion on the complex link between the DVA and the own cost of funding and considerations on the credit and funding components in the fair value measurement of financial instruments.

Do banks use different OCA curves depending on their issuances?

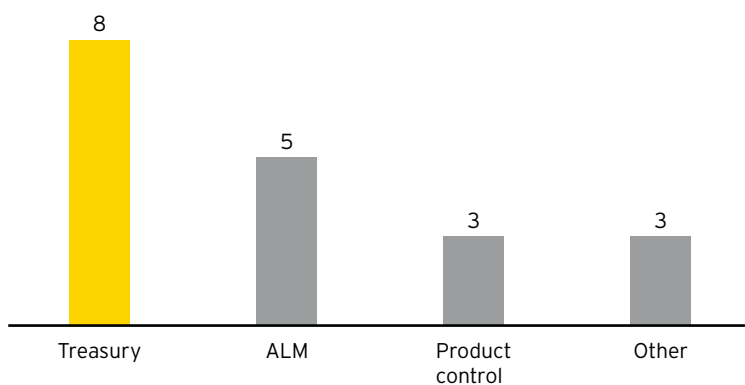
A significant number of banks use a base curve for the group, for example in USD or in EUR, and then translate it into different currencies. However, more and more banks are moving to setting up different curves depending on currencies, legal entities and products to better reflect the different levels of funding observed in different markets.



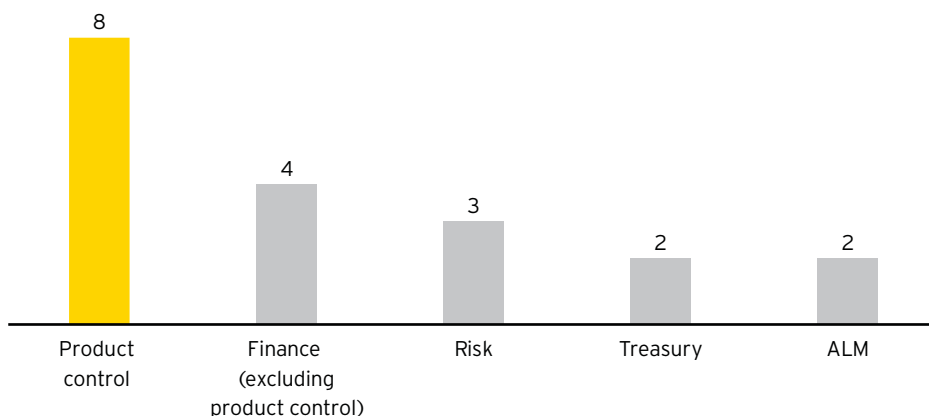
18. What governance is in place around OCA?

Banks reported generally that they have a clear segregation of duties in place. In most cases, treasury and/or ALM departments set the curve, and finance and/or product control functions calculate the own credit adjustment by applying the curve. However, three banks reported that they do not perform independent testing of the curve, and most banks do not have a detailed profit or loss explanation process in place to capture effects such as credit spread, foreign exchange and volume effects. This is partly driven by complexity of the calculation itself.

Which function sets the curve?

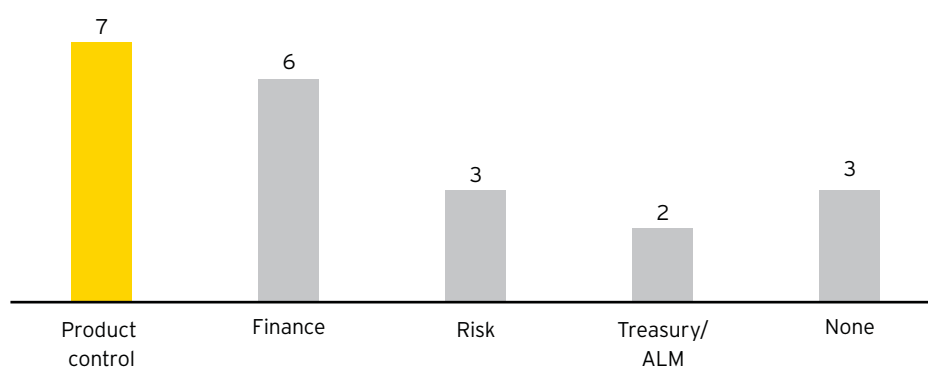


Which function calculates OCA?





Which function performs independent testing of the OCA curve?



Independent control on the own credit curve used is regarded as a key control on OCA, especially when the bank is using a target funding approach, where the spread used at month-end may be based on less observable data. Such control includes comparing the OCA curve to new issuances to check whether the bank could still issue at the level implied by the OCA curve. This would include comparing with secondary market prices, where available. Some banks commented that the secondary market comparison is designed to check that their pricing is closer to an exit price required by accounting principle, but other banks believe that the relevance of this check depends on the features of the individual issuance. One bank commented that it has less frequent and less rigorous controls on OCA as it is a measure only calculated for the financial statements. However, there seems to be a trend to automate a bank's own credit calculation and its explanation process on a daily basis.





How we may be able to help

Ernst & Young has experienced teams of accounting, quantitative, credit risk, finance, regulatory and risk process, and IT professionals who can assist you to implement, assess or enhance your processes for regulatory and/or accounting for credit and funding adjustments, to help explain income statement volatility or improve the management of regulatory capital. In the chart below, we outline the challenges in preparing for the proposed changes and describe how Ernst & Young may be able to help.

Challenges	How we may be able to help
Enhancement of your current credit and funding adjustments calculation process	<ul style="list-style-type: none"> ▶ Comparison of the existing CVA/DVA building blocks with market practices (e.g., calibration of market and credit risk factors, methodological approach, incorporation of credit risk mitigation, wrong way risk) ▶ Validation of the different model components (e.g., scenarios, valuation, incorporation of collateral), from document assessment to IT implementation ▶ Assessment of the accuracy and completeness of exposure data and contractual information on netting agreements, including data quality audit ▶ Design of pragmatic CVA/DVA approaches for simple books, including scenario generation, valuation and the incorporation of netting, cash margining and other collateral ▶ Calibration of different model components (market, credit)
Design and implementation of your vendor credit and funding adjustments calculation infrastructure	<ul style="list-style-type: none"> ▶ Vendor package selection support (RFI, RFP, proof of concept phases) ▶ Implementation support on: <ul style="list-style-type: none"> ▶ Functional requirements specification ▶ Design of contract and model data feeds ▶ Acceptance testing ▶ Go-live assessments
Setup or implementation of a CVA/DVA/ FVA/OCA management function	<ul style="list-style-type: none"> ▶ Recommendations on the function's objectives and governance (e.g., internal pricing, hedging decisions) ▶ Definition of reporting requirements and design of reports and reporting processes ▶ Hedging strategies for market and credit risk due to credit adjustments determined by management ▶ Embedding the adjustments in the overall counterparty credit risk management



Challenges	How we may be able to help
Accounting support around implementation of IFRS 13 and related principles of credit and funding adjustments	<ul style="list-style-type: none"> ▶ Assist with the implementation of using market credit spreads and determining the impact of own credit on derivative liabilities ▶ Assessment and assistance with implementation of valuation procedures relative to the IFRS 13 requirements ▶ Advice and support on data required for disclosure requirements ▶ Advice and support in drafting of disclosures ▶ Assist with improving disclosures around credit adjustments
Regulatory aspects of counterparty credit risk	<ul style="list-style-type: none"> ▶ Basel III impact assessment and road map ▶ Internal Model Method (IMM), CVA VaR model validation ▶ Regulatory reporting process assessment, including data quality ▶ Capital optimization assessment and implementation
Training for different stakeholders in the company on credit and funding adjustments	<ul style="list-style-type: none"> ▶ Counterparty credit risk concepts ▶ Accounting requirements ▶ Regulatory capital requirements ▶ Modeling, from overview of essentials to bespoke advanced modeling training ▶ Counterparty credit risk management: organizational aspects
OIS	<ul style="list-style-type: none"> ▶ Assist in assessing impact of transition to OIS/implementation of FVA discounting across institution ▶ Assist in evaluating different risk and pricing modeling approaches for OIS and FVA ▶ Assist in current state system/data gap analysis to adapt to multi curve approach ▶ Assist in incorporating CSA data quality and integrity ▶ Assist in developing control framework to monitor model performance ▶ Conduct assessment of OIS impact on hedge accounting
IMM	<ul style="list-style-type: none"> ▶ Assistance to establish and operate Basel and IMM programs ▶ Implementation support across systems, governance, processes and methodologies ▶ Data governance support ▶ Independent model validation, review of backtesting framework ▶ Benchmarking, e.g., of backtesting practices, wrong-way risk framework, governance ▶ Compliance review against local regulations such as CRDIV ▶ Independent CCR process review

Ernst & Young skills and experience

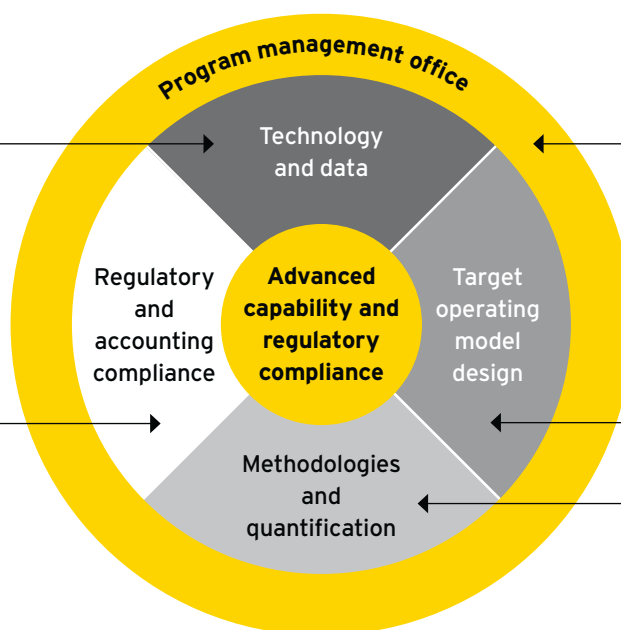
It is our core strategy to bring together specialists with different backgrounds from across different geographies to provide our clients with the best teams.

Ernst & Young has a dedicated IT advisory specialist team with experience in:

- Business and functional requirements
- Technical specifications
- Systems and data architecture
- Data management and quality
- Vendor selection and customization
- Testing strategy and execution
- IT security

Ernst & Young's performance improvement practice contains a wide pool of financial services professionals with experience in:

- Large-scale multidisciplinary projects across different jurisdictions
- TOM definition
- Process design and optimization
- Change management
- Risk-based program assurance
- Vendor management



Ernst & Young has a dedicated regulatory and risk management practice that has supported a number of firms through the regulatory process for IMM and IRB approvals, which include:

- Senior former regulators and risk practitioners
- End-to-end-risk processes
- Regulatory compliance and planning
- Accounting advisory

Ernst & Young has a large quantitative advisory services team with professionals with strong academic backgrounds and first-hand industry experience in:

- Market risk modeling (e.g., VaR, IRC)
- Derivatives valuation (including CVA)
- Stress testing
- EPE models
- Credit modeling
- Forecasting and impairment modeling

Contacts

Authors and survey team

Please contact the survey team if you would like to discuss further how we can help you understand the impact of credit and funding adjustments in the fair value of derivatives and issued debt proposals on your organization.

Tara Kengla

+44 20 7951 3054
tkengla@uk.ey.com

Siobhan Tipping

+31 88 407 2039
siobhan.tipping@nl.ey.com

Sunil Kansal

+44 20 7951 9239
skansal@uk.ey.com

Lionel Stehlin

+44 7980 738 795
lstehlin@uk.ey.com

Yolaine Kermarrec

+44 20 7951 2560
ykermarrec@uk.ey.com

Shankar Mukherjee

+44 7584 588 320
smukherjee@uk.ey.com

Contacts

Belgium**Ilse Denruyter**

+32 2774 9625
ilse.denruyter@be.ey.com

Italy**Ambrogio Virgilio**

+39 027 221 2510
ambrogio.virgilio@it.ey.com

Spain**Hector Martin Diaz**

+34 91 572 7461
hector.martindiaz@es.ey.com

Jean-Francois Hubin

+32 2774 9266
jean-francois.hubin@be.ey.com

Emilio Maffi

+39 027 221 2203
emilio.maffi@it.ey.com

Victor Manuel Martin Gimenez

+34 91 572 7906
victormanuel.martingimenez@es.ey.com

France**Laure Guégan**

+33 1 46 93 63 58
laure.geugan@fr.ey.com

Luxembourg**Aida Jerbi**

+352 42 124 8614
aida.jerbi@lu.ey.com

Switzerland**John Alton**

+41 58 286 4269
john.alton@ch.ey.com

Marie-Laure Delarue

+33 1 46 93 73 21
marie-laure.delarue@fr.ey.com

Laurent Denayer

+352 42 124 8340
laurent.denayer@lu.ey.com

Marc Ryser

+41 58 286 4903
marc.ryser@ch.ey.com

Germany**Christoph Hultsch**

+49 6196 996 26833
christoph.hultsch@de.ey.com

Netherlands**Peter Laan**

+31 88 407 1635
peter.laan@nl.ey.com

United Kingdom**Maurice McCormick**

+44 20 7951 8626
mmccormick@uk.ey.com

Martin Dörr

+49 711 9881 21870
martin.doerr@de.ey.com

Nico Warmer

+31 88 407 1400
nico.warmer@nl.ey.com

Manprit Dosanjh

+44 20 7951 1598
mdosanjh@uk.ey.com





About Ernst & Young

Ernst & Young is a global leader in assurance, tax, transaction and advisory services. Worldwide, our 152,000 people are united by our shared values and an unwavering commitment to quality. We make a difference by helping our people, our clients and our wider communities achieve their potential.

Ernst & Young refers to the global organization of member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit www.ey.com.

About Ernst & Young's Banking & Capital Markets Center

In today's globally competitive and highly regulated environment, managing risk effectively while satisfying an array of divergent stakeholders is a key goal of banks and securities firms. Ernst & Young's Global Banking & Capital Markets Center brings together a worldwide team of professionals to help you achieve your potential – a team with deep technical experience in providing assurance, tax, transaction and advisory services. The Center works to anticipate market trends, identify the implications and develop points of view on relevant industry issues. Ultimately it enables us to help you meet your goals and compete more effectively. It's how Ernst & Young makes a difference.

© 2012 EYGM Limited.
All Rights Reserved.

EYG no. EK0101



In line with Ernst & Young's commitment to minimize its impact on the environment, this document has been printed on paper with a high recycled content.

This publication contains information in summary form and is therefore intended for general guidance only. It is not intended to be a substitute for detailed research or the exercise of professional judgment. Neither EYGM Limited nor any other member of the global Ernst & Young organization can accept any responsibility for loss occasioned to any person acting or refraining from action as a result of any material in this publication. On any specific matter, reference should be made to the appropriate advisor.

ED None

EMEIA MAS 722.0712