

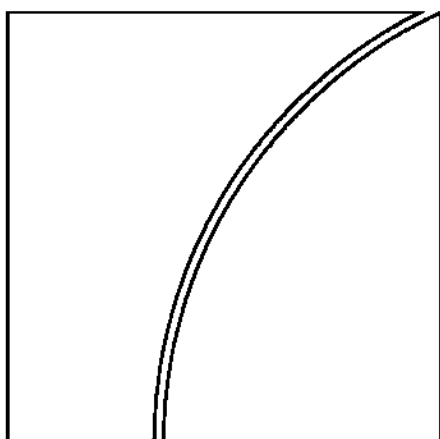
Basel Committee on Banking Supervision

Consultative Document

Application of own credit risk adjustments to derivatives

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Application of own credit risk adjustments to derivatives

The Basel Committee welcomes comments on all aspects of this consultative document by **Friday 17 February 2012**. Comments should be sent by e-mail to baselcommittee@bis.org. Alternatively, comments may be addressed to the following address: Basel Committee on Banking Supervision, Bank for International Settlements, Centralbahnplatz 2, CH-4002 Basel, Switzerland. All comments may be published on the BIS website unless a commenter specifically requests confidential treatment.

Executive Summary

Paragraph 75 of the Basel III rules text requires banks to “[d]erecognise in the calculation of Common Equity Tier 1, all unrealised 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.”¹ This rule ensures that an increase in credit risk of a bank does not lead to a reduction in the value of its liabilities, and thereby an increase in its common equity.

This overarching principle applies to debt issued by banks and also has implications for the treatment of fair valued derivatives. However, the application of paragraph 75 to derivatives is not straightforward since their valuations depend on a range of factors other than the bank’s own creditworthiness,² such as interest rates and other market factors that can affect the exposures value. It is not easy to separate out changes in value that are only due to changes in a bank’s own credit risk.

This consultative paper includes a brief discussion of various options that the Basel Committee has considered to apply the underlying concept of paragraph 75 to over-the-counter (OTC) derivatives (and securities financing transactions (SFTs)³). It proposes that debit valuation adjustments (DVAs) for these products should be fully deducted in the calculation of Common Equity Tier 1 (CET1).

Background

The Basel Committee published in June 2004 a press release titled “Regulatory capital in light of forthcoming changes in accounting standards”.⁴ It stated that “the Committee ... examined the appropriate regulatory treatment of any gains and losses arising from changes in an institution’s own credit risk as a result of applying the fair value option to its liabilities.

¹ Paragraph 75 of “Basel III: A global regulatory framework for more resilient banks and banking systems” (published in December 2010 and revised in June 2011), available at www.bis.org/publ/bcbs189.pdf.

² The bank’s creditworthiness can be measured on the basis of credit risk parameters such as credit spreads and default probabilities.

³ While it is quite common for internationally active banks to do own-credit related adjustments to the accounting value of derivatives, this is much less common for SFTs. For this reason, the present paper will only mention derivatives. However, if a bank takes its own creditworthiness into account in the accounting value of SFTs, it will be required to apply the same CET1 adjustments as required for derivatives.

⁴ Available at: www.bis.org/press/p040608.htm

The Committee believes that the potential inclusion of these gains and losses ... raises significant supervisory concerns and is of the view that they should be excluded.”

The ‘*Supervisory guidance on the use of the fair value option by banks under IFRS*’, published in June 2006 by the Basel Committee, also indicated in principle 7 that “regulatory capital should be adjusted for gains and losses from changes in own credit risk as a result of applying the fair value option to financial liabilities.” This adjustment avoids an increase in a bank’s capital when its own creditworthiness deteriorates, which would otherwise undermine the quality of capital and the protection it provides to depositors and senior creditors. Paragraph 75 of Basel III applies this approach to all fair-valued liabilities.

Issue for derivatives

The fair-value pricing of an OTC derivative depends on market variables (ie interest rates, exchange rates, etc) and the creditworthiness of both banks entering into the contract, as well as the valuation methodologies used by banks. In this context, a credit valuation adjustment (CVA) is typically defined as the difference between the value of a derivative assuming the counterparty is default-risk free and the value reflecting default risk of the counterparty. Similarly, a debit valuation adjustment (DVA) is typically defined as the difference between the value of the derivative assuming the bank is default-risk free and the value reflecting default risk of the bank.⁵ Changes in a bank’s own credit risk therefore result in changes in the DVA component of the valuation of the bank’s derivatives.

Compared to non-derivative liabilities, there are several complications associated with isolating changes in the fair value of derivatives due to changes in a bank’s own creditworthiness, including:

- DVAs depend on the bank’s own creditworthiness, the interest rate used for discounting and other drivers of the expected exposure that the derivative creates for the counterparty. Therefore, DVAs are sensitive not only to changes in the own creditworthiness (ie credit spreads or probabilities of default) but also to changes in all factors that affect the expected exposures.
- When close-out netting applies to a set of derivative contracts, the computation of DVAs must take into account the netting set because the expected exposure becomes a portfolio measure rather than a single-trade measure.
- DVAs exist irrespective of whether the current fair value of a trade or a netting set of trades is positive (representing a net asset) or negative (representing a net liability).
- At the inception of new un-netted trades, a positive DVA exists from the very beginning. When new trades enter existing netting sets, this has an immediate impact on the DVA of that netting set. The impact is typically positive but can be negative in some cases.
- The estimation of DVAs requires complex modeling methodologies that estimate the evolution of exposures over time and rely on assumptions and parameters that can vary from bank to bank.

⁵ That is: $DVA = \text{fair value (reflecting all counterparty credit risk)} - \text{hypothetical fair value ignoring own credit risk}$.

Given the complexities above, banks have questioned the way in which the treatment of own credit risk set out in paragraph 75 of Basel III should be applied to derivatives contracts. This consultative document seeks views on a proposal for a common approach that banks would be required to follow.

Proposed approach: Full deduction of DVA

The adjustment required by paragraph 75 of Basel III neutralises the impact of changes in a bank's own credit risk in the calculation of CET1. It does not derecognise all own credit risk at inception.⁶

The Basel Committee considered various ways that banks could be required to apply paragraph 75 such that the impact of changes in own credit risk on the fair value of derivatives will be neutralised (see the annex). However, the options considered are viewed as either too complex, lacking conservatism, or relying too heavily on modelling assumptions.

Therefore, after considering various alternatives, the Basel Committee is of the view that all DVAs for derivatives should be fully deducted in the calculation of CET1. The deduction of DVAs is to occur at each reporting date, and requires deducting the spread premium over the risk free rate for derivative liabilities. In effect, this would require banks to value their derivatives for CET1 purposes as if they (but not their counterparties) were risk free, and deduct the unrealised gains both at inception of the derivative and afterwards, when the creditworthiness of the bank deteriorates.

The Basel Committee recognises that this option is generally more conservative than paragraph 75, as it generally leads to a CET1 deduction at trade inception equal to the credit risk premium of the bank, rather than the change in value of derivative contracts occurring as a result of changes in the reporting bank's own credit risk.

However, the option is transparent and simple when compared to the alternatives set out in the annex, and ensures that a deterioration in own credit risk cannot result in a CET1 increase.

⁶ For example, when a bank issues a bond at par value, the bank is actually valuing the bond using a discount rate that reflects its own credit risk at the moment of issuance and investors will receive coupon payments that factor in that level of credit risk. There will be no adjustment required by paragraph 75 at inception in respect of this bond; only subsequent changes in the credit standing of the bank will lead to an adjustment.

Annex

Alternative approaches considered

This annex provides an overview of the alternative options that the Basel Committee considered. These options are viewed as too complex, lacking conservatism or relying too heavily on modelling assumptions.

(a) Recognition of initial DVA assuming a linear decay

In an attempt to de-recognise only changes in DVA, but not initial DVA, the Basel Committee considered an option where the initial DVA of new trades would be fully recognised in CET1. The option considered was to assume a pattern of DVA as trades approach maturity. More specifically, the maturing of existing trades would be approximated by a linear decay of the initial DVA. All other sources of DVA changes (not restricted to changes in own creditworthiness, but also changes in potential future exposure and interest rates) would be derecognised.

At inception of each new trade, banks would have to calculate the DVA impact of adding this trade to the existing netting set. This impact is called the “initial DVA” of that trade. If the trade is not netted, this simply corresponds to the DVA at inception. “Initial DVA” could be negative in some cases, when a new trade reduces the counterparty’s exposure to the bank in an existing netting set.

For each netting-set, the “regulatory DVA” for the purpose of CET1 determination would be calculated as the greater of zero and the sum over all trades of their initial DVA multiplied by the remaining time to maturity divided by the initial time to maturity. In the calculation of CET1, all derivative DVAs would be replaced by the regulatory DVA. That is, as a correction to CET1, banks would subtract accounting DVA and add the regulatory DVA.

This option is not supported by the Basel Committee because of its complexity and the introduction of a new concept (ie the “regulatory DVA”). Furthermore, the linear decay may not be in all cases a realistic or conservative approximation of how DVAs of existing trades would evolve if all market factors remained constant since inception.

(b) Derecognition of DVA changes due to the bank’s own creditworthiness

The Basel Committee also considered an option that attempts to replicate as close as possible the treatment for non-derivative liabilities. Under this option, the aim would be to derecognise gains and losses due to changes in the bank’s own creditworthiness, but recognise all other effects related to DVA.

For a derivative that is not netted, the bank would also have to calculate the DVA based on the bank's historical creditworthiness⁷ as of the derivative's inception date. Otherwise, current market prices (interest rates, exchange rates, etc) are used as for the accounting DVA. This defines the "regulatory DVA". In the calculation of CET1, all derivative DVAs would be replaced by the regulatory DVA. That is, as a correction to CET1, banks would subtract accounting DVA and add the regulatory DVA.

For netting sets that contain derivative contracts with different inception dates, the netting set DVA would have to be allocated to the individual trades using an appropriate allocation model yet to be defined. In analogy to the DVAs of non-netted trades, these allocated trade-level DVAs would have to be calculated twice using, the banks actual and historical creditworthiness respectively, and the CET1 would be corrected by the difference between the two outcomes.

This option is not supported by the Basel Committee because of its complexity and the introduction of new regulatory concepts (ie trade level DVA allocation, and DVAs based on the bank's historical creditworthiness). Also, the precise outcome of this approach would depend on the details of the allocation model, yet to be defined.

(c) Adjustment based on liquidation claim and balance sheet value

The Basel Committee also considered an option that would require banks to look at each derivative and deduct in the calculation of CET1 any decrease in common equity that would occur if the derivative was revalued to reflect the claim of the bank or counterparty on the insolvency of the bank. If the claim on the insolvency of the bank is uncertain, the bank would be required to calculate the maximum claim that could be made in respect of the derivative. The method used to determine the claim would need to be applied consistently between derivative assets and derivative liabilities.

The aim of this approach is to only require an adjustment in the calculation of CET1 where this is necessary to ensure that CET1 reflects the protection available to depositors and other senior creditors on the failure of the bank.

Before considering how this approach would apply to derivatives, it is useful to consider the simpler case of non-derivative liabilities. For example, consider a bank that issues a bond with an initial fair value of 100 and a claim on insolvency of 100, and assume that this bond is fair valued on the balance sheet. If the own credit risk of the bank deteriorates the bond liability decreases. Let us assume that it decreases from 100 to 95. This creates 5 of common equity on the balance sheet. However, it would not be appropriate to rely on this additional 5 of common equity because if the bank fails, the claim of the bondholder is 100, not 95. This means that the 5 of common equity that was generated disappears in insolvency. In other words the 5 of common equity is not loss absorbent. Paragraph 75 of the Basel III requires this bank to deduct 5 from common equity in the calculation of CET1.

Similar logic can be applied to determine the appropriate prudential adjustment for derivatives. For example, consider a bank that takes out a swap with a counterparty of equal credit standing and that the swap has zero value on inception. Then assume that the credit standing of the bank deteriorates. This deterioration leads to an increase of DVA. Let us

⁷ In practice, this would be historical credit spread curves in most cases.

assume that in this case a DVA increase of 5 is created. The creation of this additional DVA on the balance sheet leads in turn to the creation of common equity of 5. However, if the bank fails, the claim of the counterparty will likely be zero. In other words the 5 of common equity that was created by the DVA asset is not loss absorbent. The appropriate prudential treatment therefore seems to be to deduct 5 from common equity in the calculation of CET1. This is the treatment that would be required by approach (c).⁸

The bank would be required to look at the current value of the derivative on the balance sheet (5 in the example above) and the claim of its counterparty in insolvency (zero in the example above) and deducts the positive difference from common equity (to reflect the fact that the valuation of the derivative asset changes from 5 to zero in insolvency).

This option is not supported by the Basel Committee given concerns that banks are often not in a position to determine accurately the close-out value of derivatives.

⁸ Please note that the alternatives (a) and (b) and (c) would all lead to the same outcome in this simple example but they would differ in more realistic cases.