

# A Corporate Hedger's Guide to Basel III

Kevin Lester, AMCT  
Director, Risk Management and Treasury Services  
Validus Risk Management Ltd.

## Basel III – Changing the Rules of the Game

The impending Basel III regulations will impose much greater capital requirements on banks, and in the banking sector, capital equals cost. Whilst the specific implications of Basel III on the pricing of derivatives for non-financial corporates is not yet completely clear (it is contingent on the accompanying regional implementation legislation which has yet to be finalized), what is clear is that hedging costs (which are partially determined by the cost of credit) will rise as a result of the new rules. As such, the focus on reducing the cost of hedging (and maximizing hedging efficiency) has never been greater.

### An Introduction to Basel III

The Basel III regulatory regime is the successor to Basel II, the second of the Basel Accords, which was introduced in 2004. The purpose of Basel II was to create an international standard for bank regulation, with a specific focus on the necessary level of capital which banks must hold to guard against financial and operational risk. Basel III is, in many ways, an attempt to 'upgrade' the guidelines for bank capitalization, based upon the lessons and conclusions of the recent global financial crisis.

The key regulatory changes which will result from Basel III include:

- ⇒ Increased capital requirements;
- ⇒ New liquidity and funding ratios; and
- ⇒ The introduction of a leverage ratio.

These changes will be implemented over a five period, beginning in 2013. However, implementation of increased capital requirements actually began in 2012 (known as Basel 2.5).

For the purposes of corporate hedging activity, the key change which will impact on the corporate hedging environment is the increase in capital requirements facing the banks. This impact will result from two separate but related factors:

Capital requirements will be higher overall (increasing the cost of credit – an important component in total hedging cost); and

The calculation of risk-weighted assets, the denominator of the capital adequacy ratio,



### Inside this issue

|                                    |   |
|------------------------------------|---|
| What is CVA? .....                 | 2 |
| The impact of Basel III .....      | 3 |
| Improving Hedging Efficiency ..... | 4 |

### Special points of interest

- Quantifying the impact of Basel III on hedging costs.
- How can hedging programs be adjusted to reduce the impact of Basel III?
- The bank's perspective on Basel III.



will change, increasing the amount of capital that the banks must hold against OTC derivatives. This will result primarily from the introduction of a credit value adjustment (CVA), which must be added to the default risk capital charge (which already exists under Basel II) to determine the total counterparty credit risk capital charge.

Whilst the content of Basel III is largely decided, the precise implications remain unclear. Most significantly, the regional legislation which will govern the implementation of Basel III (e.g. Capital Requirements Directive IV (CRD IV) in Europe, Dodd-Frank in the US) has not been finalized – and one of the key uncertainties is whether this legislation will exempt trades with corporates from the CVA charge. As of this writing, it appears that with respect to CRD IV (likely to be the first regional directive to be finalized), the European Parliament is seeking to secure a CVA exemption for banks when dealing with corporate clients who use derivatives for hedging purposes – however, this opinion is not necessarily shared by the Council of Ministers, and the outcome of this political negotiation remains unclear. Due to this uncertainty, many banks have already begun to apply CVA charges on transactions with their corporate clients, as they cannot afford to under-price long duration contracts which later must reflect the additional capital charges.

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*“many banks have already begun to apply CVA charges on transactions with their corporate clients”*

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### What is CVA?

The concept of CVA originated as an accounting standard which was developed in 2000 as part of IAS 39. CVA is designed to measure the loss of market value resulting from a deterioration of a counterparty's credit worthiness (excluding the cost of an actual default), reflecting the fact that as a counterparty's financial position worsens, the market value of its obligations declines, even though there might not necessarily be an actual default.

Basel III requires that a CVA Risk Capital Charge be added to a Default Risk Capital Charge, to determine the Total Counterparty Credit Risk Capital Charge (CCR), which determines the regulatory capital that the bank must hold for a particular transaction, or position.

Under Basel II, the entire CCR was comprised of the Default Risk Capital Charge only, and there was no consideration of the potential valuation impact of a deterioration of a counterparty's creditworthiness. However, following the financial crisis in 2008, it was widely recognized that such an approach badly underestimated the true degree of counterparty risk exposure embedded within derivative transactions. In fact, it is estimated that approximately two-thirds of the total counterparty credit risk losses that occurred during the 2007-2009 credit crisis were, in fact, CVA losses, as opposed to actual defaults.

Conceptually, therefore, CVA is a relatively straight-forward concept; it represents the market value of counterparty credit risk. In other words, as the perception of a counterparty's credit risk deteriorates, the value of its commitments declines concurrently (as any bank attempting to offload mortgage-backed CDOs in 2008 will confirm). However, assigning a numerical value to this concept can be much more complicated - the CVA charge will typically be calculated by using a value-at-risk model which is driven by the credit spreads of their derivative counterparties (either derived from

credit default swaps (CDS) if available, or alternatively an appropriate proxy spread).

## The Bank's Perspective

Depending on the applicability of CVA to transactions with corporate clients, Basel III may change the way that banks view OTC derivatives transactions dramatically. Capital requirements for OTC transactions would likely rise by factor of three or four, causing the costs involved in entering into these transactions to increase, often significantly, when the regulations come into force at the beginning of 2013. As such, despite a lack of certainty about whether or not there will be an exemption for corporate transactions, many larger banks have already started incorporating the impact of CVA into their pricing for OTC transactions which extend beyond the 2013 introduction of the CVA adjustment (this has been less common amongst tier two and tier three banks, although this is changing).

In addition, banks will increasingly seek to manage their credit exposure to OTC transactions more carefully. This could involve avoiding certain deals completely (e.g. long-dated swaps), hedging the exposure in the credit default swap (CDS) market, or encouraging corporate clients to collateralize their OTC trades.

However, what is certain is that a proportion of these increased costs will be passed on to the corporate hedger. The exact increase in costs for the corporate client will depend on a number of factors, such as:

- a) Credit strength of the client;
- b) Specific parameters of the underlying transaction;
- c) Ability of the bank to hedge the client's credit risk exposure (i.e. the availability of a CDS contract);
- d) The bank's return targets;
- e) The bank's funding costs (if a trade is not collateralized, the bank may have to post collateral on its off-setting interbank trade without receiving collateral from the client, and therefore these funding costs would be passed through); and
- f) Impact of the individual trade on aggregate CVA exposure to the client.

## The Impact of Basel III on Hedging Activities

The effects of Basel III on corporate hedging activity will likely be felt across all three core parameters of hedging strategy: hedge duration, hedging instrument selection, and target hedge ratio. The impact will be felt irrespective of whether CVA applies to corporates or not (due to the overall increasing cost of credit), although the extent of the impact will obviously be influenced by the applicability of CVA. In either case, understanding the relative impacts of the Basel III changes will better enable corporate treasurers to ensure that their hedging strategies are designed to maximize hedging efficiency (and minimize hedging costs) in the post-Basel III environment.

### Hedge Duration

The impact of hedging duration on hedging costs will be significant under the Basel III framework for a couple of reasons. Firstly, calculating the credit charge on a particular transaction involves estimating the potential future mark-to-market exposure of the position; the greater the duration of the transaction, the greater the possible positive valuation to which the bank will become exposed. Secondly, the credit charge is influenced by the probability of default; the greater the duration, the greater the probability that the client will default during the life of the trade.

As such, the degree of increased hedging costs precipitated by the Basel III regulations will be partially driven by the duration of hedging transactions; and the cost of longer





duration transactions will increase disproportionately to shorter-duration deals. Chart 1 illustrates the estimated credit charges associated with a \$10 million EURUSD forward contract for three different counterparty credit ratings.

On average, doubling the hedging tenor increases the credit charges by a factor of three or more. This implies the significant reductions in hedging costs may be possible by implementing a series of short duration hedges and rolling them forward periodically (although this may create additional liquidity, operational and interest rate risk).

#### **Hedging Instrument**

The nature of the hedging instrument itself will also affect the degree to which Basel III will increase hedging costs. As a general rule, the higher the potential size of the obligation created by a given instrument (i.e. the asset for the bank), the more capital-intensive it will be. Cross-currency swaps are particularly likely to experience a marked increase in cost as a result of the new regulations, as the size of the mark-to-market position can be impacted (and increased) by both foreign exchange and interest rate movements (not to mention the often lengthy duration involved).

One clear impact of this is that the relative price of plain vanilla options will decline compared to 'fixing' contracts like swaps and forwards. As a sold option can never be considered an asset, it will not create potential counterparty exposure – and will therefore not be subject to a counterparty credit risk charge.

Another possible impact will be a search for creative replacements for current hedging instruments which are less capital-intensive. Simple forward or swap contracts can be modified by inserting break clauses (options to terminate the trade at certain points) or mark-to-market resets, effectively reducing the duration of counterparty credit risk exposure, and reducing the capital charge. Even more radical solutions, such as replacing OTC interest rate swaps with

off-setting loans to reduce capital requirements, have been suggested, but the regulatory implications of such transparent attempts to circumvent regulatory requirements are far from clear.

#### **Hedge Ratio**

Perhaps one of the most significant implications of Basel III for the corporate hedger is that, all things equal, it will discourage hedging activity. As the cost of hedging goes up (depending on the type of transaction, hedging costs could rise by up to 400% or more), the marginal benefit of hedging will decline – resulting in lower hedge ratios, or, in extreme cases, the termination of certain hedging programs altogether.

This could have long-term effects on issues such as the sourcing of capital, the location of commercial facilities, and the attractiveness of overseas markets. For example, sourcing debt funding in the most efficient (i.e. lowest cost) capital market, and using a cross currency swap to convert the proceeds into the required currency has been standard procedure for many corporate treasurers for years. Now, it is likely that simply borrowing directly in the required currency will often be a more attractive option. Likewise, the incentive to develop natural hedges within the business (such as moving production facilities into export markets to mitigate FX risk) will become even greater.

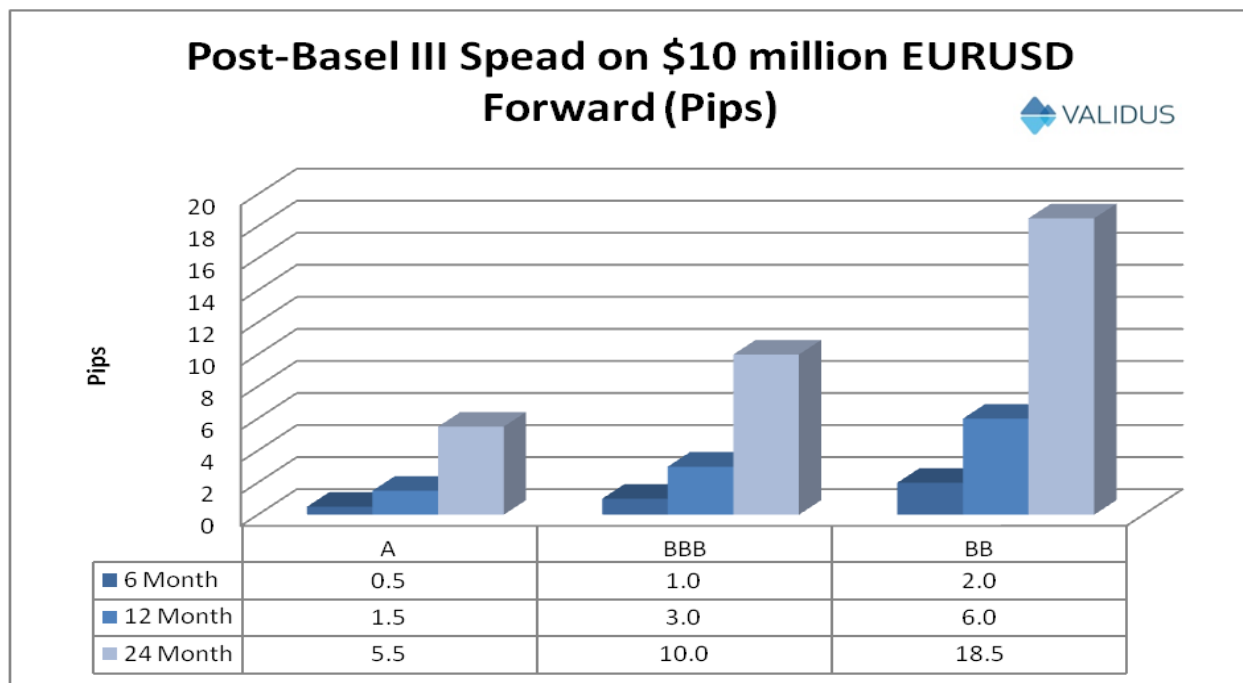
#### **Improving Hedging Efficiency under Basel III**

Irrespective of the serious implications of the new regulations on hedging activity, Basel III will not eliminate the need for corporate treasurers to manage financial risk through the use of financial derivatives. However, it will become increasingly important to find creative ways to maximize the efficiency of corporate hedging programs, and there are a number of ways in which this increase in hedging efficiency can be achieved.

#### **Shop around**

The impact of Basel III on hedging costs will differ from bank to bank. Factors

Chart I



Source: Tier 1 US Investment Bank

such as the bank’s existing CVA exposure to a particular client, the desire for ancillary business, and even the location of the bank (as the legislation governing the implementation of Basel III does differ by region, this will affect the timing and impact of the new requirements) will determine the actual cost that is passed through from bank to customer. In addition, banks are not adjusting derivative pricing at a uniform pace (larger tier 1 banks adjusted pricing more quickly than some smaller, regional banks, for example). As such, whilst encouraging competition amongst banks for derivative contracts has always been a good way for treasurers to manage hedging costs, this activity will likely be even more important in the future.

**Collateralize**

Non-financial corporations have traditionally been notoriously reluctant to post collateral to facilitate hedging transactions. Whilst this reluctance is understandable (collateralization brings with it operational and liquidity risk), the incentives to do so will likely become greater under Basel III.

The chart on the following page (Chart II) shows the estimated increase in hedging costs of a \$100 million EURUSD swap resulting from the Basel III capital charge, and demonstrates the impact of collateralization on this increase.

Whilst Basel III increases the cost of the uncollateralized trade by a factor of four, under the collateralized scenario the proportional increase is much lower.

Not surprisingly, the potential to significantly reduce hedging costs has led to a rapid increase in the number of corporates using Credit Support Annexes (CSAs), which facilitate the collateralization of derivative trades. Deutsche Bank recently estimated that approximately 60% of their corporate clients now use CSAs, compared to 5% in the pre-Lehman era. (Collateralization clearly has other benefits besides the reduction of hedging costs, not least the reduction of counterparty risk).

**Use Surplus Cash as ‘Static Deposit Collateral’**

For companies who would prefer to avoid the operational complexity of peri-



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#### Validus Risk Management Ltd.

59—60 Thames Street  
Windsor  
United Kingdom  
SL4 1TX  
+44 (0) 1753 27 2380

1235 Bay St., Suite 400  
Toronto, ON  
Canada  
M5R 3K4  
+(1) 416 934 5003

[www.validusrm.com](http://www.validusrm.com)

[info@validusrm.com](mailto:info@validusrm.com)

odic collateral calls and postings, it may be possible to use deposits of surplus cash as an alternative. Typically used for longer-duration trades (5 years plus), this approach, known as static deposit collateral, can have the added advantage of not requiring ‘top-ups’, even when a position’s market-to-market value deteriorates.

#### Optimize Hedging Tenor

As highlighted above, the relationship between the increase in hedging costs under Basel III and instrument duration is non-linear; long-duration derivatives are disproportionately penalized under the CVA calculation methodology. As such, by breaking long duration hedges up into shorter time buckets (and rolling them forward periodically), considerable improvements in hedging efficiency may be accrued. In a sense, this simulates a ‘lite’ version of collateralization; reducing hedging costs at the expense of increased operational and liquidity risk (and potentially interest rate / basis risk).

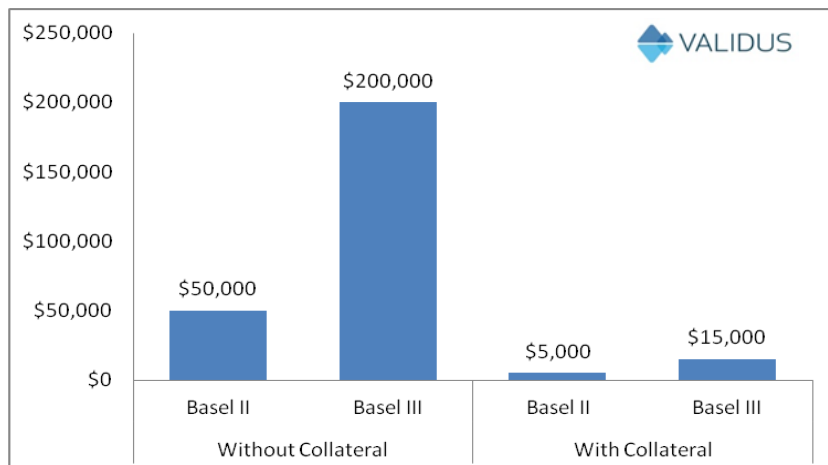
#### Adjust Instrument Parameters

It is possible to reduce the effective tenor of a trade (and hence the hedging costs), by restructuring a transaction to include breaks and / or mark-to-market resets. This could involve settling a 20 year swap every four or five years, for example, and potentially including an option to terminate the trade completely. The obvious downside, from the corporate treasurer’s perspective, is that such a clause would likely be triggered by deterioration in company credit quality, meaning that the hedge might be lost precisely at the point when sourcing a replacement hedge may not be possible (or excessively costly).

#### Looking Forward

The exact impact of Basel III on corporate hedging costs will not be known until the finalization of the related regional legislation. CRD IV is expected to be finalized before the end of the year, and this will likely influence the corresponding regulatory decisions in other regions. However, irrespective of whether CVA is applied to corporate transactions or not, the reality is that the price of credit, and the cost of hedging, will rise as banks are forced to increase capital ratios, and the benefits of improving hedging efficiency will only get bigger.

Chart II: Estimated Hedging Costs of \$100 million EURUSD Swap



Source: Tier 1 European Bank