IFRS 13 Fair Value Measurement –
Incorporating credit risk into fair values

The Impact on Corporate Treasury

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Executive Summary

IFRS® 13 Fair Value Measurement was originally issued in May 2011 by the International Accounting Standards Board (IASB). This standard applies to IFRS that require or permit fair value measurements or disclosures and the aim is to provide a single framework of the definition of fair value across all IFRS®. IFRS 13 is the result of the work by the IASB and the U.S. Financial Accounting Standards Board (FASB) in trying to develop common requirements for measuring fair value and for disclosing information about fair value measurements in accordance with IFRS and US generally accepted accounting principles (GAAP). The equivalent standard under US GAAP is Topic 820 Fair Value Measurement. As U.S. experience has demonstrated, the impact on corporate treasuries reporting under IFRS will be significant. Methodologies for calculating fair value will change, causing greater income statement volatility and increased hedge ineffectiveness. However, corporate treasurers will be able to leverage the lessons learnt and best practices of their U.S. counterparts. This paper deals with only one aspect of the change of the fair value definition and that is the incorporation of credit risk into valuations of financial instruments, specifically own credit risk.

OVERVIEW

The concept of a single fair value measurement standard began in 2005 when the IASB initiated a project to provide guidance to entities on how they should measure the fair value of assets and liabilities when required by multiple Standards. This Standard does not prescribe when fair value measurement is required but rather how that fair value should be derived and lays out the disclosures required in terms of fair value measurements. The IASB feels that guidance on measuring fair value has been added to IFRS on a piecemeal basis over a number of years, resulting in complex, vague and, at times, inconsistent guidance. This can be seen in the Application Guidance on fair value in IAS 39 Financial Instruments: Recognition and Measurement. Many auditors and large companies employed Application Guidance (AG) 69 – 82 when determining how to calculate fair value. For example, AG 69 states that “fair value reflects the credit quality of the instrument,” while AG 82 calls for “credit risk to be considered as a factor when determining fair value”.

1 International Financial Reporting Standards
2 Limited exceptions do apply

About the authors

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However, while most entities have been monitoring credit risk with respect to derivatives, only a few of the largest organizations are currently monitoring this risk on a quantitative level.

Treasurers and financial controllers will now be able to look to IFRS 13, as opposed to IAS 39, for guidance on calculating the fair value of their derivatives. However, the new approach defined in this standard, combined with significantly larger credit margins and reduced liquidity, could well result in significantly different fair values and accounting outcomes than treasurers and their CFO’s have seen previously.

What has changed?

The Standard has principally changed the definition of fair value from what was previously defined in IAS 39. The basis is now of an ‘exit-price’ notion and uses a ‘fair value hierarchy’ similar to what is defined in IFRS 7. This results in a market-based, rather than entity-specific measurement.

IFRS 13.9 defines fair value 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”.

In contrast IAS 39.9 defines fair value as “The amount for which an asset could be exchanged or a liability settled between knowledgeable, willing parties in an arm’s length transaction”.

As such there are some key differences between these two definitions, of which the notion being to exit the liability rather than to settle the liability is key. This is important from the perspective of incorporation of credit risk as will be noted further in this paper.

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3 Financial Instruments: Disclosure
Although this new definition seems fairly straightforward and intuitive at first glance, in practice it will significantly affect the fair values of many common derivative positions. When measuring fair value, an entity uses the assumptions that market participants would use when pricing the asset or liability under current market conditions, including assumptions about risk. As a result, an entity’s intention to hold an asset or settle or otherwise fulfill a liability is not relevant when measuring fair value.

Entities will now need to consider their counterparty’s credit in determining fair value when an instrument is an asset, and they will need to consider their own credit risk when an instrument is a liability. This is explicitly stated in IFRS 13.42: “The fair value of a liability reflects the effect of non-performance risk. Non-performance risk includes, but may not be limited to an entity’s own credit risk (as defined in IFRS 7: Financial Instruments: Disclosures). Non-performance risk is assumed to be the same before and after the transfer of the liability.”

Combined with the significant widening of credit spreads since the financial crisis and particularly in Europe over the last year, fair value adjustments for credit may often be significant.

Consider the table below illustrating potential own credit valuation adjustments for a 10 year interest rate swap for ratings A to BB for a company in the Oil and Gas sector:

<table>
<thead>
<tr>
<th>Curve</th>
<th>Credit spread</th>
<th>Fair value</th>
<th>Chg v Libor flat</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIBOR flat</td>
<td></td>
<td>$ (16,558,735)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Oil and Gas Credit Default swap spread</td>
<td>1.00%</td>
<td>$ (16,197,041)</td>
<td>$ 361,694</td>
<td>-2.18%</td>
</tr>
<tr>
<td>BBB Oil and Gas Credit Default swap spread</td>
<td>1.83%</td>
<td>$ (15,868,808)</td>
<td>$ 689,927</td>
<td>-4.17%</td>
</tr>
<tr>
<td>BB Oil and Gas Credit Default swap spread</td>
<td>4.53%</td>
<td>$ (14,922,927)</td>
<td>$ 1,635,808</td>
<td>-9.88%</td>
</tr>
</tbody>
</table>

10yr USD 100m IRS Pay fixed 3.6%, Rec float Libor 3M as of 31 July 2012

As can be noted above the quantum of the valuation adjustment can be quite significant and material.

If we consider a 10 year cross currency interest rate swap for similar ratings in the same industry you will note that the CVA can be even more significant since the greatest fair value subject to credit risk sits at the maturity date of the swap with the principal settlements.

<table>
<thead>
<tr>
<th>Curve</th>
<th>Credit spread</th>
<th>Fair value</th>
<th>Chg v Libor flat</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIBOR flat</td>
<td></td>
<td>$ (41,282,798)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Oil and Gas Credit Default swap spread</td>
<td>1.00%</td>
<td>$ (39,608,766)</td>
<td>$ 1,674,032</td>
<td>-4.06%</td>
</tr>
<tr>
<td>BBB Oil and Gas Credit Default swap spread</td>
<td>1.83%</td>
<td>$ (38,232,111)</td>
<td>$ 3,050,687</td>
<td>-7.39%</td>
</tr>
<tr>
<td>BB Oil and Gas Credit Default swap spread</td>
<td>4.53%</td>
<td>$ (34,178,370)</td>
<td>$ 7,104,428</td>
<td>-17.21%</td>
</tr>
</tbody>
</table>

10yr USD 142m IRS Pay fixed 3.9%, EUR 100m Rec float Euribor 6M as of 31 July 2012
The Warning Signs

Corporate treasurers may look for warning signs across their portfolios to determine where the greatest impact of this new standard will likely occur. In general, the factors determining the size of these credit adjustments are:

a) Tenor of cash flows

The longer-dated the transaction, the higher the risk of default; hence, the credit adjustment tends to be larger. For example, a 10 year swap has greater credit risk embedded in it than a three-month forward exchange contract. Typically, the following scenarios could potentially result in material credit value adjustments:

- Large interest rate hedge portfolios – the longer term nature of interest rate exposures lends itself to larger credit adjustments. There need not be a large volume of deals, just significant positions.
- Significant strategic commodity hedging positions over the medium to long term – for example, mining companies often have large hedge positions for anticipated exposures as part of their banking covenants.
- Strategic foreign exchange positions – such as for large capital expenditure or infrastructure projects
- The graphical analysis below shows fixed leg (in blue) and floating leg (in green) discounted cash flows of a typical interest rate swap. The purple bars on the floating leg and the red bars on the fixed leg illustrate the amended discounted cash flows once a credit adjustment is made. Here, the size of the adjustment increases as the duration of the cash flow extends into the future.

b) Size of asset/liability position at each reporting date

It follows that the larger the asset or liability at reporting date, the larger the probable adjustment will be for credit. Treasurers will want to focus on the areas where large fair values exist (or could exist) when analyzing the impact of credit on fair values.

c) Credit spread of entities and counterparties.

In general, the lower the credit quality, the higher the credit margin and the larger the credit value adjustment. Naturally, if an
entity or counterparty’s ratings are AA or better, the scope for large adjustments is reduced, even in the current market. Over the last 12 months, ratings of BBB or less have seen some large movements in their credit spreads, particularly as a result of the Euro crisis where some banking counterparts in the EU have credit spreads of up to 600 basis points. This means that even if a rating remains unchanged, significant volatility can occur in the credit adjustment. Tracking this and applying the proper credit curve poses unique challenges.

d) Master netting agreements
Companies must consider the impact of their netting agreements on their credit adjustments, particularly when making an initial assessment as to whether their net derivative exposure is an asset or a liability for each counterparty. The net exposure to a particular counterparty should always be considered prior to determining the nature of the credit spread to be applied. Similarly care should be taken over what is allowed to be netted in terms of different asset classes and across subsidiaries within the group.

e) Nature of collateral agreements
For companies with collateral agreements, credit risk may be reduced or in some cases completely eliminated. However, how collateral agreements are applied can be difficult to understand when considering the nature of those agreements, e.g. zero threshold versus some other threshold, incorporating potential collateral calls, two-way collateral agreements, etc. Treasurers may want to examine their existing collateral agreements and consider the potential impact on the credit risk position across the portfolio.

**Valuation Techniques**
The principles-based standard of IFRS 13 does not prescribe a methodology for making credit adjustments to transactions or quoted prices. Rather IFRS 13.61 states:

> “An entity shall use valuation techniques that are appropriate in the circumstances and for which sufficient data is available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.”

Paragraph 62 goes on to state that there are three widely used valuation techniques, namely the market approach, the cost approach and the income approach. The key challenge for treasurers will be how to capture the non-performance risk or ‘risk premium’ associated with a derivative asset or liability.

Within the Application Guidance of the standard, paragraphs B12-B30 provides sample techniques to calculate this risk premium. The most commonly applied technique amongst U.S. companies is the Discount Rate Adjustment Technique.
This technique adjusts the discount factor from flat LIBOR by a credit component representative of either the counterparty’s or entity’s credit risk. Generally, this technique has proven to offer a reliable estimate of the risk premium and is relatively transparent as to the drivers behind that adjustment. Other techniques discussed include expected present value techniques or potential future exposure, which tend to be used by large financial institutions that already have such tools to monitor credit risk.

**Obtaining Good Credit Data**

Using the most appropriate technique is one part of the problem, but sourcing accurate, robust credit data itself can be as equally difficult in the current market environment. Many companies look to the bond or CDS markets or to credit ratings to determine an appropriate spread over LIBOR for representing their counterparties’ and their own credit. Based on experience of implementing Topic 820 in the US, many believe that a company’s quoted CDS spreads provide the best guide of corporate non-performance risks. Many institutions are concerned that credit ratings can become out of date quite quickly and CDS spreads seem to capture credit risk far quicker. Risky bond spreads are not preferred as in the current market environment they also include liquidity premiums, which do not reflect non-performance risk, but rather the general scarcity of funds available for borrowing.

However, obtaining good credit data when a company is not a rated organisation, does not issue bonds (or not recently anyway), and has no active CDS market in its name, is another issue. Such situations can occur most commonly when a corporate seeks to models its own credit, and there often are no easy answers. Many companies look to find comparably-sized organizations—in the same industry and geography and rated with an active CDS market—to use as a proxy for its own credit. As such entities should raise their proposed calculations with their auditors as early as possible to avoid any unpleasant surprises at year end.

In terms of counterparty credit, although financial institutions have enjoyed more liquid credit, bond, and CDS ratings/spreads than companies have in the past, the new reality is that financial institutions are highly exposed to the Euro crisis, high levels of consumer debt, fair-market valuations in an illiquid market, and the implosion of the banking system subject to increasing regulatory changes. This has often led to counterparty credit spreads being wider than an entity’s own credit – an almost unthinkable situation given most companies’ policies around the credit rating of their counterparties. It is no longer acceptable to simply say entities are dealing with the top tier banks in the UK and therefore no adjustment is required for credit risk.
Similarly the Implementation Guidance to IAS 39: F4.3 Hedge effectiveness: counterparty credit risk deals with counterparty risk and states that an entity must consider the likelihood of default by the counterparty to the hedging instrument in assessing hedge effectiveness.

This gives some hint that credit risk may cause ineffectiveness in itself, even if the hedge and hedged item’s cash flows are completely matched. The derivative itself must include the fair value adjustment made for credit risk either of the counterparty or the entity depending if the position is in an asset or a liability. However questions are being asked about the hedged item or hypothetical derivative in a cash flow hedge relationship.

Many existing hedge relationships are documented exclusive of credit i.e. designation of the risk to Libor related interest rate movements. Therefore this would imply that only the hedge itself will be adjusted for credit as you are not hedging for credit risk in the hedged item. If so, then previously perfectly effective hedges will now have ineffectiveness equal to the derivative’s credit adjustment. (This is because it would not be appropriate to strip out the credit valuation adjustment of the derivative as there are only two instances where you can split the fair value of a derivative in a hedge relationship (IAS39.74).

An example of this is illustrated below

<table>
<thead>
<tr>
<th>Hedge relationship:</th>
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<tbody>
<tr>
<td>Hedged item:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Hedging instrument:</td>
</tr>
<tr>
<td>Term:</td>
</tr>
<tr>
<td>Without CVA</td>
</tr>
<tr>
<td>With CVA</td>
</tr>
</tbody>
</table>
The diagram below illustrates the divergence of the slope of the hedge effectiveness results when the credit valuation adjustment is taken into account in the hedging instrument. The red line is moving further away from 100% effectiveness and in some cases drops below the lower threshold of 80% causing the hedge to fail.

The graph below illustrates the difference in ineffectiveness when credit valuation adjustments are taken into account on the hedging instrument. This hedging instrument is with a recognized multi-national European bank as the counterparty and the entity is a BBB rated entity in the Oil and Gas Industry.

As can be noted from the above, the amount of ineffectiveness recorded in each period is significantly larger when taking into account the credit valuation adjustments on the cross currency interest rate swap.

For hypothetical derivatives used in cash flow hedge relationships there has been differing interpretations. It has been argued that since it is a perfect hedge of the designated risk, then it is a perfect hedge with the counterparty of the actual hedge; therefore, the same credit adjustment to the actual swap should be applied to the hypothetical. It follows, then, that the hypothetical derivative should also be valued with the same credit curve as the actual swap, regardless of whether the hypothetical is in an asset or a liability position, resulting in no ineffectiveness due to credit risk.
An alternate view is that the hypothetical derivative reflects the cash flows of the hedged item, and only the entity’s credit could be applicable if credit were to be taken into account. If credit has been excluded from the hedge item, then no credit adjustment would be applied to the hypothetical. As a result hedge ineffectiveness may arise. Auditors in the U.S. have required clients to assess and measure hedging relationships under any of these views. The answers to these questions are material, can be expected to result in more income statement volatility, and in the worst case, cause previously effective hedge relationships to fail the effectiveness assessment going forward. Many companies already struggling and frustrated with the complex rules of hedge accounting will now have to contend with even more complexity in terms of assessment and measurement in their hedging relationships. Therefore, it is important that when entities consider a hedge accounting software solution, they choose a system that is flexible enough to handle any auditor requirement. We are still eagerly awaiting the Exposure Draft on the Hedge Accounting section of IFRS 9 but it is not yet known how much, if any, detail will be provided with regards to the incorporation of credit risk in the assessment of hedge effectiveness.

**Conclusion and Timing**

IFRS 13 is applicable for annual periods beginning on or after 1 January 2013\(^4\). Earlier application is permitted. It is clear that incorporating non-performance risk can have a profound impact on valuations as well as assessment and measurement calculations for those applying hedge accounting under IAS 39. Most organisations will have to actively monitor both their own credit ratings as well as the credit ratings of their counterparties on a quantitative level. Improvement to systems will be a must, not just for the credit component of fair values, but to make the appropriate adjustments to hedge accounting. Coupled with this is the need for accurate and up to date credit data to be used in such calculations.

Fortunately for reporting entities, comparative numbers will not be required however 2013 is just around the corner so companies need to initiate the process now and consider system changes to meet the requirements of IFRS 13.

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\(^4\) Companies in the EU will only be able to apply once EU endorsement has occurred which is expected in Q4 2012.