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The smart way to manage financial risk

IAS 39 - Under the Hood

Issue 3

In keeping with our commitment to develop a comprehensive risk management solution, Visual Risk will be providing a regular article on the new IAS39 Accounting Standard. The aim of the articles is to build an understanding of the Standard from the ground up, beginning with the rationale for the Standard, reviewing the basics of hedge accounting and then taking a closer look at some of the intricacies of the Standard.

How to qualify for Hedge Accounting?

As we noted in Issue 2, to qualify for hedge accounting, full documentation is required at the inception of the hedge relationship. For cash flow hedges, another condition is that a forecast transaction must be highly probable. Hedge accounting is discontinued if such a transaction changes status to “expected to occur” (gains/losses stay in equity) or “no longer expected to occur” (gains/losses go to P&L - para. 101)**.

The other 3 qualifying conditions relate to effectiveness testing. Firstly, the effectiveness of the hedge can be reliably measured, meaning that the fair value and cash flows of the hedged item that are attributable to the hedged risk and the fair value of the hedging instrument can be reliably measured. Secondly, the hedge must be expected to be highly effective and be assessed on an ongoing basis (prospective testing). Thirdly the hedge must actually have been highly effective (retrospective testing).

System Implications:

Each hedge relationship will have to be fully documented. The hedging strategy, the hedge objective and the results of effectiveness tests will need to be recorded and be consistent. The total proportions of any derivatives and hedged items that are in relationships will have to be monitored so changes in fair value are correctly dealt with in the accounts.

What about the shortcut method?

FAS133 provides for a short cut test method (FAS133.114 for swaps and DIG 20 for options). This involves comparing the critical terms of the hedged items and hedging instruments. If everything matches exactly, no ineffectiveness is recorded in P&L for the life of the hedge.

A common question is whether this is allowed under IAS39. While there are differing opinions, the IAS39 standard is much more restrictive in this regard than FAS133. It does give an example of a commodity forward hedging an exposure with exactly matching principal terms but only concedes that “[the hedge] is likely to be highly effective” and it does not provide for any different accounting treatment as a result (AG108). Moreover, in this example, critical terms matching included the delivery location and time.

System Implications:

As some form of shortcut testing might be acceptable, a system should be able to check matching principal terms within parameters set down by the user.



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Prospective testing

IAS39 requires that “the hedge is expected to be highly effective in achieving offsetting changes in fair value or cash flows attributable to the hedged risk during the period for which the hedge is designated” (AG105 (a)).

Unfortunately (or fortunately depending on your situation!), the standard does not specify a single method for assessing hedge effectiveness. It suggests comparing past changes in the fair value or cash flows or demonstrating a high statistical correlation between the fair value or cash flows of the hedged items and hedging instruments.

For a new hedge, this is done by using either actual historical prices for a representative period or simulated data. The fair value or cash flow changes that would have occurred using this data are generated and used to determine the effectiveness of the hedge. At the inception of the hedge, the documentation must specify any effectiveness test methods in detail. In relation to market data this will mean specifying:

- the testing frequency or how often the data will be sampled, e.g. monthly
- the term of the test data, e.g. 2 years
- whether changes are assessed on a cumulative or single period basis
- the test method and test limits for assessing results

System Implications:

An IAS39 compliance system should be able to store and manage a significant amount of historical market data, such as yield curves, exchange rates, volatilities and commodity prices to run hedge effectiveness tests.

Which test method?

3 methods are commonly mentioned.

Dollar offset: This is calculating the changes in cash flows or fair values for hedged items and hedging instruments and checking that their ratio is between 80% and 125%. This test can be unreliable even for hedges that should be highly effective if the actual changes are very small. For example, a change of \$0 and \$2 in the fair value of the hedged item and hedging instrument respectively, will give a result of 0% ($\$0/\2). For this reason this test is not recommended for anything other than a perfect hedge.

Regression analysis: This is calculating changes in cash flows or fair values and doing a regression analysis to determine if the hedging instrument is highly effective in offsetting changes in the hedged item. These changes can be calculated using historical data or by using simulated data. A regression analysis means drawing a line of best fit through a series of points. The documentation must specify how the results of the regression will be assessed (Implementation Guidance F.4.4). The two key test statistics of a regression are the *slope* and *R-squared*. The slope is a measure of the ratio of the changes and so the closer the result is to 1, the better the result. R-squared is a measure of how close the regression line fits the data and the higher this number is (it can not exceed 1), the more reliable the result. How to take these two numbers and determine if the test passes or fails is a complex question and, so far, no definite rules have appeared. Both statistics being greater than 0.8 and less than 1.25 is a sufficient condition for passing that has been suggested.



Volatility Reduction Method:

This method was proposed by Andrew Kalotay and Leslie Abreo (**). It is based on comparing the volatility of changes in value or cash flows of the *underlying* with the same volatility for the *underlying plus hedging instrument*. The higher the volatility reduction, the better the test. This method has intuitive appeal in that it measures how the hedge reduces the risk and, for fair value hedges, doing this test is similar to calculating the value-at-risk of two different portfolios (hedged item on its own and with the hedging instrument) and making a comparison. For cash flow hedges, the test would involve comparing the cashflow-at-risk of the two portfolios.

System Implications:

As always, documentation is important. Any data that is used for testing and valuation will need to be recorded for an audit trail.

Test methods, data terms and testing frequencies will all have an impact on the performance of the test, so the flexibility of the system to try different test methods on different data sets will be important. The test method can not be changed after the inception of the hedge.

Retrospective testing

IAS39 requires that “the actual results (*changes in cash flows or fair values*) of the hedge are within a range of 80-125 per cent” (AG105 (b)). This requirement that actual changes in cash flows or fair values pass the dollar offset test is a necessary condition for hedge effectiveness. Given the problems with dollar offset mentioned above, it would appear that it could cause some economically sound hedges to fail.

The implementation guidance provides some relief:

“Expected hedge effectiveness may be assessed on a cumulative basis if the hedge is so designated, and that condition is incorporated into the appropriate hedging documentation. Therefore, even if a hedge is not expected to be highly effective in a particular period, hedge accounting is not precluded if effectiveness is expected to remain sufficiently high over the life of the hedging relationship” (AASB 139 Implementation Guidance F.4.2).

In practice this could mean that if the actual changes in cash flows or fair values fail the dollar offset test, this result could be ignored if it is not deemed material. Alternatively a statistical test might need to be done based on actual results to date combined with potential results based on historical data to show that effectiveness is still expected over the life of the relationship.

System Implications:

Recording and analysing actual results will be important. A system will have to be able to value and calculate the cashflows of all hedged items and instruments.

Any retrospective test failure will have to be dealt with, possibly with statistical analysis over the remaining life of the hedge. Any such process for assessing retrospective testing will have to be detailed at the inception of the hedge and again, forward looking flexibility will help to avoid any test failures.



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Next Issue

Our next issue of Under the Hood will give some examples of how different test methods and data sets can be implemented and affect testing in practice.

Previous Issues

Previous Issues of Under the Hood and other newsletters from Visual Risk can be downloaded from our web-site at:

http://www.visualrisk.com/01_company/newsletters.htm

** All references to the standard are to Accounting Standard AASB 139 (July 2004)

*** A. Kalotay & L. Abreo, "The Volatility Reduction Measure", *Bank of America Journal of Applied Corporate Finance*, Winter 2001.