

# WAYS TO TEST HEDGE EFFECTIVENESS:

## Reconsidering Regression Analysis

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**F**or companies that use derivatives to manage financial risk — be it interest rate risk, currency risk or commodity risk — some are lucky and some aren't.

The lucky ones are those with derivative contracts tailored to the risk being hedged, where all critical terms of the derivative correspond to critical terms of the risk being hedged. Unlucky companies are those where these terms don't line up.

Differences in underlying derivative terms vs. exposure, timing of the relevant value or repricing dates, or location differences that are relevant for commodity exposure, mean that the hedges can't be assumed to be effective. Therefore, some documentation is required to validate the expectation that these hedges will be effective.

Guidance on how to construct hedge effectiveness tests is fairly non-specific, leaving considerable flexibility to each reporting entity. But this flexibility comes at a cost. An overly-permissive criterion might create a window of opportunity for second-guessing on the part of the auditing firm or, worse yet, the U.S. Securities and Exchange Commission (SEC). In the latter case, the reporting firm could face the unenviable prospect of having to restate company earnings.

### Historical Perspective

To qualify for special hedge accounting, companies should assess hedge effectiveness both prospectively and retrospectively. This type of accounting ensures that losses or gains of a derivative will be recognized in earnings in the same time interval as losses or gains associated with the hedged item. Companies also should measure and disclose any ineffectiveness that may have occurred.

Dollar-offset ratios compare the results of the derivative to those of the hedged item. Many firms rely on these ratios for effectiveness testing and measurement purposes.

The commonly accepted criterion for passing an effectiveness test is that the ratio must fall within the bounds of 0.8 and 1.2, where the effects of the two components of the ratio are in opposing directions — when one gains, the other loses, for instance. It became apparent early on, however, that reliance on this ratio for hedge effectiveness testing proved problematic, with an unexpectedly high failure rate.

Particularly with quiescent market conditions, when small market changes are recorded, these ratios often return outcomes well outside of the prescribed bounds. As an example, if the hedged item remains stable (with a result of zero) and the derivative generates a single dollar gain, the dollar-offset ratio is infinity.



In the Derivatives Implementation Group (DIG) issue E7, the Financial Accounting Standards Board (FASB) acknowledged this problem and offered a solution. The FASB created an allowance, whereby hedge accounting could still be applied seamlessly even if a dollar offset calculation returned a result outside of the required bounds — provided the statistical analysis were rerun and the expectation of prospective effectiveness were revalidated. To take advantage of this allowance, however, the hedge documentation would have to be appropriate, detailing the statistical analysis that would be used.

Most firms — at least those that were paying attention — elected to use regression analysis as their preferred statistical method. For these firms, paragraph 75 of FAS 133 offers critical guidance.

That's where FASB asserts that if prices associated with the derivative and prices associated with the hedged item are highly correlated, companies may conclude that their hedges will be highly effective. DIG issue E7, however, added the caveat that statistical analysis can be complex. Companies that employ these methodologies should have the capacity to interpret results and make statistical inferences appropriately.

### The Latest Twist

In December 2003, the SEC weighed in with new information. In a speech before the AICPA's national conference by John M. James, professional accounting fellow, office of the chief accountant of the U.S. Securities and Exchange Commission, James stated

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that the staff of the SEC believe the reliance on the R-Square statistic — a traditional measure of correlation — was insufficient. He specified the hedge effectiveness determination should also consider the slope coefficient of the regression equation and its significance. "The staff expects that if registrants are utilizing statistical techniques to assess hedge effectiveness that they understand how to use and appropriately evaluate such techniques, which may necessitate the use of specialists," he said.

### Implications

While these recently articulated sensitivities might complicate hedge effectiveness testing and documentation, the issue highlighted in the SEC speech has merit.

In a properly constructed regression analysis, the coefficient referred to previously reflects the minimum variance hedge ratio or the value that determines the appropriate size of the hedge position. As a statistic, the R-Square only has merit if the hedge is implemented in the same proportion as that dictated by the regression equation. Put another way, being able to validate that the prices underlying the hedged item and the hedging derivative are highly correlated doesn't mean the hedge can't be sized incorrectly for the exposure in question.

FAS 133 has always represented a challenge for companies. It forced risk managers and financial reporting professionals to establish a much higher level of mutual understanding than had been required before the enactment of the standard. The latest SEC speech reinforces this requirement and clarifies a particular point where the two sides of reporting entities have to come together. 

*Disclaimer: Readers should consult their audit firms when considering what documentation or methodology is acceptable to meet the requirements of FAS 133. Opinions expressed in this article are solely the author's.*



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