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Reuters America Inc.
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Editor: Andrew Porter
Designer: Maria Anatra
Associate Editor: Michelle Yi
Associate Editor: Yvonne Psaila
Contributors: Andrew Kalotay, Leslie Abreo, Edward S. Rosenbaum, Mitch Stonehocker

www.riskreuters.com
US: 212-603-3573
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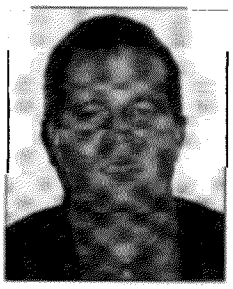

Andrew S. Porter
Head of Risk Management, Reuters Trading Solutions, Reuters America

Letter from the Editor

On my mind...

In September, a teenager became the youngest person ever charged with securities fraud in the United States. Over a period of six months, the fifteen-year old netted over a quarter million dollars trading stocks online. Apparently, this astounding performance was achieved with the aid of Internet bulletin boards, where the young financier posted fabricated descriptions and benefits of the companies whose stocks he held. Obviously an honor student in creative writing, the teen was able to convince hoards of unwary investors to jump into the small capitalization stocks he held. It seems to me that the youngster has a future as a research analyst on Wall Street, where wildly bullish forecasts and recommendations have become standard procedure in order to ensure a lucrative underwriting and M&A business.

In keeping with the theme above, it's time for the SEC to continue the momentum generated from Regulation FD (Full Disclosure), which I fully support and believe will force more independent and creative company research, to Regulation BS. As I propose it, Regulation BS will leave an analyst with only two recommendation options for stocks: (B)uy or (S)ell. Additionally, the analyst would have to place an "I" next to the rating if their firm has an investment banking relationship with the company. Regulation BS will spare us from having to go to our Wall Street thesaurus to look up "Accumulate," which is a euphemism for "SELL." It will further create cross-firm consistency in terms of rating scales. The one drawback: I wonder if anyone will issue a sell recommendation.

In this issue

In our continuing series on issues pertaining to FAS 133, which sets accounting guidelines for derivatives and hedging activities, Andrew Kalotay and Leslie Abreo discuss shortcomings with existing hedge effectiveness tests and propose their own methodology, known as the Variance Reduction Method (VRM).

Edward S. Rosenbaum, Director of Research at Lipper, discusses why the Asian fund management industry has been slow to adopt relative performance benchmarks. For comparison, the author examines the pension fund management industries in Chile and the United States.

Finally, Mitch Stonehocker examines the efforts taken by financial regulators in Mexico to improve price transparency in illiquid securities.

As this is the last issue of the year, we would like to wish all our readers and their families a happy holiday season and best wishes for a healthy and prosperous New Year.

As always, we appreciate your comments. Please contact me at andrew.porter @reuters.com and share your thoughts and ideas. Editorials are welcome and may be published.

FAS 133: Hedge Effectiveness Testing

*Andrew Kalotay and Leslie Abreo, Andrew Kalotay Associates, Inc.**

Background

Corporations routinely employ derivative products, such as interest rate swaps, to hedge business risk. For example, a financial institution with floating rate assets might synthetically convert its fixed coupon bond obligation into a floating rate obligation by entering into an appropriate interest rate swap.

But corporations can also use derivative products for speculation, with unpre-

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***FAS 133: Hedge Effectiveness Testing,* continued from page 1**

dictable and possibly disastrous consequences, such as in the notorious case of the Proctor & Gamble fiasco. The problem for shareholders is that this kind of exposure typically gets buried in footnotes to the corporation's financial statements, even if it has the potential (realized in the case of P&G) to have a material effect on reported earnings.

In an attempt to make a corporation's exposure to its derivative positions more transparent, the Financial Accounting Standards Board (FASB) has issued Statement 133 (later amended by Statement 138). This statement requires full disclosure of the derivative products employed by the corporation. In addition, derivatives must be marked to the market and the changes in their market value reported in the income statement.

However, to mitigate the resulting volatility of earnings (anathema to Wall Street's equity analysts), FAS 133 allows the corporation to mark the hedged liability or asset to market as well. In order to qualify for this favorable treatment, the hedge must be shown to be highly effective.

Hedge Effectiveness Testing: Overview

Having laid down the prerequisite that a hedge must be shown to be highly effective, FASB has provided only broad guidelines as to how to actually test for effectiveness. Before reviewing these guidelines, it might be helpful to discuss the rationale for hedging from an economic, rather than an accounting, perspective.

The basic motivation for hedging is to eliminate unpredictability due to market changes. In the real world of imperfect hedges, practitioners tend to be concerned only with large deviations relative to the scale of the hedged item.

In principle, a hedge is effective if the price movements of the hedged item and the hedging vehicle roughly offset each other so the net change of the package is negligible relative to the hedged item.

A well-designed effectiveness test should pass a hedge that is truly effective, and fail one that is not. At first blush, a relatively lenient test would seem desirable to a corporation, so that most derivative positions qualify for hedge accounting treatment. But passing the effectiveness test is only the initial step: the proof of the pudding is in the reported earnings. A test with a low power of discrimination, one that is easy to pass, can result in significant earnings volatility.

FASB Guidelines

The FASB has suggested two approaches to effectiveness testing. One is the so-called "80/125 Rule." A hedge is deemed effective if the ratio of the change in value of the derivative to that of the hedged item is between 80% and 125%.

An unintended and unfortunate consequence of this test is that during periods of market stability, virtually any hedge is likely to fail. Consider, for example, a $100 million bond hedged with an interest rate swap. A $10,000 change in the value of the bond and a $4,000 opposite change in the value of the swap results in a ratio 0.4. Hence, under the 80/125 rule, the hedge will be deemed ineffective even though the net change of $6,000 is a miniscule 0.006% of the face amount. This absence of scale points out a fundamental shortcoming of the 80/125 Rule – its susceptibility to "false positives."

The second approach suggested by the FASB is based on the correlation of the changes in value of the hedged item and that of the derivative. Roughly speaking, a hedge is deemed effective if the R-squared[1] of the regression line explaining the data is sufficiently high, say 80%.

But a high R-squared alone is not a reliable indicator of effectiveness. In addition, the changes in value should be roughly offsetting, i.e., the slope of the regression line should be close to 1, a consideration not explicitly referred to in FAS133. A related issue not addressed is the intercept of the regression line. Should the intercept be constrained to 0 or should the "best fit" regression determine it? Constraints on the regression process lower the R-squared, and increase the likelihood that the hedge will fail the effectiveness test.

As indicated, FASB has provided only broad guidelines to effectiveness testing. In the absence of definitive guidance, corporations are expected to devise, apply and defend their own tests. In that vein, we propose the following approach.

The Volatility Reduction Measure (VRM)[2]

Traders and portfolio managers, whose compensation is affected by the actual performance of hedges, judge the effectiveness of a hedge in terms of volatility reduction. The volatility of the item being hedged in the absence of a hedge is the obvious point of reference against which this reduction should be measured. In contrast, the FASB guidelines focus on *pair-wise* (date-by-date) comparison of changes in value, rather than on overall volatility with and without the hedge. The VRM method described below captures the significance of hedging to practitioners while retaining the basic intent of FASB.

The following example graphically conveys the essence of the VRM approach. ***Figure 1*** shows the frequency distribution of 1,406 quarterly changes in value of a $100 million 8% 10-year "LIBOR"-credit corporate bond. The standard deviation (volatility) of this distribution is $3.651 million. ***Figure 2*** overlays analogous information for the combination of the bond and an 8% LIBOR-based 9-year swap of like notional amount. The graph corroborates a volatility reduction from $3.651 million to $0.275 million.

FIGURE 1: VOLATILITY REDUCTION MEASURE
BASE CASE: 10-YR 8% BOND "LIBOR" CREDIT (UNHEDGED)
DISTRIBUTION OF 1406 QUARTERLY CHANGES IN VALUE BASED ON RATES FROM 5/94 – 12/99

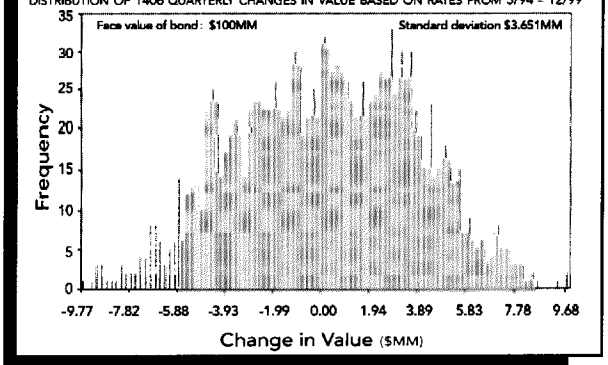
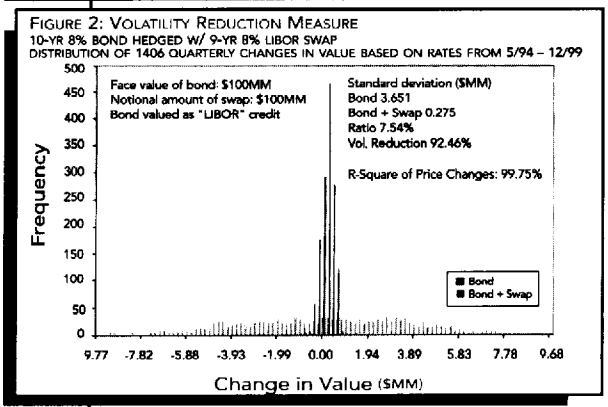


FIGURE 2: VOLATILITY REDUCTION MEASURE
10-YR 8% BOND HEDGED W/ 9-YR 8% LIBOR SWAP
DISTRIBUTION OF 1406 QUARTERLY CHANGES IN VALUE BASED ON RATES FROM 5/94 – 12/99



More formally, the volatility reduction measure is defined as:

$$VRM = 1 - \frac{\text{stdev (hedge package)}}{\text{stdev(item being hedged)}}$$

In the above example, the volatility of the hedged item was reduced by 92.46% (1–0.275MM / 3.651MM).

Optimal Hedge Ratio and VRM

As mentioned earlier, the R-squared test without reference to slope is not meaningful. Since R-squared is independent of scale, the size of the derivative does not affect it. There is, however, only one size that actually maximizes VRM.

Consider a hedged item and a derivative with known standard deviations and correlation. The standard deviation of the hedge package (item + derivative) is minimized, and therefore VRM is maximized[3] when the derivative position is scaled so that:

$$\sigma_d = -\rho_{id} \cdot \sigma_i \quad \text{(Equation 1)}$$

where σ_i, σ_d, and ρ_{id} are the standard deviations of the hedged item and the derivative, and their correlation, respectively.

The maximum volatility reduction[4] is given by:

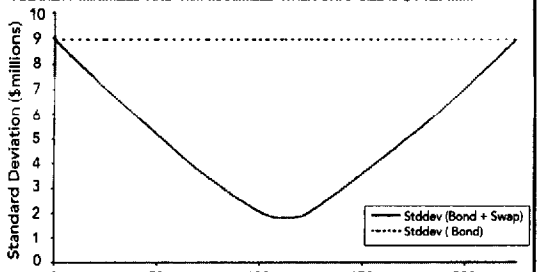
$$\text{Max VRM} = 1-(1-\rho_{id}^2)^{1/2} \quad \text{(Equation 2)}$$

As an illustration, say a $100 million bond issue is hedged with a $100 million swap. Based on six data points (for simplicity), we see in ***Table 1*** that the standard deviation of the changes in value of the swap is $7.782 million; that of the bond is $8.934 million and the correlation between them is –97.886%. ***Figure 3*** demonstrates how changing the size of the swap affects the performance of the hedge. The maximum volatility reduction is achieved when the notional amount of the swap is $112.4MM ($-\rho_{id} \cdot \sigma_i / \sigma_d$ =0.97886 x 8.934 / 7.782 = 1.124 from Equation 1 above). This maximum is 79.545% (consistent with Equation 2 above).

Table 1: Changes in Value of $100M Swap and $100M Bond (in $ millions)

Δ_d(Swap)	Δ_i(Bond)
5.0	(6.0)
2.0	(2.2)
(8.0)	7.0
9.0	(8.0)
11.0	(15.0)
(6.0)	8.0
σ_d(Swap): 7.782	σ_i(Bond): 8.934
ρ_{id} = -97.886%	

FIGURE 3: VOLATILITY REDUCTION OF $100MM BOND ISSUE
VOLATILITY MINIMIZED AND VRM MAXIMIZED WHEN SWAP SIZE IS $112.4MM



Conclusions

While the foregoing example is in the realm of fixed income, the VRM test can be applied to hedges in general, be they currency or commodity-related. The VRM test can also be directly applied to portfolio-based hedging (i.e., a portfolio of assets or liabilities being hedged with a portfolio of derivatives), even though inexplicably FASB does not accord favorable treatment to such at present.

The VRM approach is superior in its simplicity. It is rigorous, defensible and reasonable. Standard deviation is the accepted measure of volatility. When expressed in dollar terms, standard deviation reflects actual business risk, and unlike arcane statistics such as R-squared, it is familiar to higher management. Last, but not least, the VRM method is consistent with Value-at-Risk (VaR), a widely-used measure in risk management.

**Andrew Kalotay Associates is a New York-based firm specializing in risk management and capital markets advisory. Dr. Kalotay is a member of the Fixed Income Analysts' Society Hall of Fame.*

[1]In an unconstrained bivariate regression, R-squared is the square of the correlation between the two variables.

[2]The Volatility Reduction Measure (patent pending) for hedge effectiveness testing was invented by Andrew Kalotay Associates, Inc.

[3]To maximize VRM, find the weight of the derivative that minimizes the standard deviation of the hedge package (σ_p), given the standard deviations of the hedged item and the derivative and the correlation between them (σ_i, σ_d, and ρ_{id} respectively). Solve by differentiating $\sigma_p = (\sigma_i^2 + 2\rho_{id} + \sigma_d^2)^{1/2}$ with respect to σ_d and setting the result equal to 0.

[4]Substitute $\sigma_d = -\rho_{id} \cdot \sigma_i$ in the VRM formula $(1-(\sigma_i^2+2\rho_{id}+\sigma_d^2)^{1/2}/\sigma_i)$.

➡ *The Fund Management Business in Asia: Getting to the Next Stage*

Edward S. Rosenbaum, CFA, Vice President and Director of Research, Lipper, Inc, a Reuters Company.

By any measure, the performance of funds – and of markets in general – has been highly variable in Asia for decades. Why, then, have fund management companies and their clients, both retail and institutional, been slow to take advantage of the smoothing effect of adopting relative performance benchmarks as the preferred way of reporting to their clients?

There are several possibilities. One could be the volatile performance of regional equity markets. In an environment dominated by big upward moves in equity prices, relative performance measurement generates smaller positive numbers than does absolute performance. And in a down market, relative performance acts to mask losses. To some, quoting relative performance statistics may look like the refuge of the untalented fund manager. And relative performance measurement of stocks and funds may seem cold-blooded – a cerebral approach to one of the region's most thrilling sports.

Another possible explanation could be the concentration of regional equity indices in a small number of large stocks. If your relative performance was negative, it meant that you didn't own three or four specific stocks in sufficient quantity. There are far fewer interesting explanations of variations in relative performance than in more variegated equity markets. In this environment, relative performance measurement can appear to be an exercise in the measurement of the obvious.

Retirees, Fiduciaries, and their Role in the Investment Business in Asia

While there is much truth to these explanations, by far the most important reason for the lack of use of relative benchmarks in Asia has to do with the power of a specific type of institution in Asian financial markets: fiduciaries in general, and fiduciaries of large groups of retirees in particular. The institutions with the greatest need for relative performance measurement – Asian retirement plan sponsors, both fiduciary and direct – simply do not dominate the