

## FINANCIAL ACCOUNTING STANDARDS NO. 133: HEDGE ACCOUNTING RULES FOR U.S. FIRMS

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Article abstract

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The Standard defines three fundamental accounting rules that significantly modify the accounting practices of U.S. firms. The three rules are:

1. All derivatives should be reported on statements of financial position. 2. All derivatives should be reported at fair value. 3. Accounting for changes in the values of derivatives depends on the use of the derivative and whether it qualifies for hedge accounting.

The details of applying this third rule is likely to lead to extensive discussions regarding the cost and the benefits of specific provisions of FAS 133.

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by Harold Bierman, Jr.

## ABSTRACT

In June 1998 the Financial Accounting Standards Board published FAS 133 *Accounting for Derivative Instruments and Hedging Activities*.

The Standard defines three fundamental accounting rules that significantly modify the accounting practices of U.S. firms. The three rules are:

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**Keywords:** Financial Accounting Standards No. 133, Derivatives, Hedging, U.S. Firms.

## RÉSUMÉ

Le Financial Accounting Standards Bureau (FASB) publia, en juin 1998, le FAS No. 133 qui s'intitule *Accounting for Derivative Instruments and Hedging Activities*.

Le FASB définit trois règles comptables fondamentales susceptibles de modifier substantiellement les pratiques comptables des firmes américaines. Ces trois règles sont les suivantes:

1. Tous les instruments financiers dérivés doivent être inscrits sur la déclaration de la situation financière.
2. Tous les instruments financiers dérivés doivent apparaître aux états financiers à leur juste valeur.
3. La comptabilisation inhérente aux changements dans la valeur des instruments dérivés dépend et de leur utilisation et de leur qualification comme comptabilité de couverture.

Les détails relatifs à l'application de cette troisième règle est susceptible vraisemblablement de conduire à de larges discussions concernant les coûts et les bénéfices des clauses spécifiques du FAS No. 133.

**Mots clés :** FAS No. 133, instruments financiers dérivés, couverture, entreprises américaines.

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The accounting issues associated with hedging were well defined by Bierman, Johnson and Peterson (1991) and Benston and Mian (1995), but for U.S. firms the basic accounting issues associated with hedging are both defined, and to some extent resolved, for U.S. firms by FAS 133. The accounting issues of hedging are very much related to the accounting issues of derivatives, thus Financial Accounting Standards No. 133 of the FASB is titled *Accounting for Derivative Instruments and Hedging Activities*.

The objectives of this paper are to describe the fundamental requirements of FAS 133 and evaluate them given the basic theoretical objective of hedge accounting to reflect accurately in each period's financial statements the economic consequences of hedging activity by a firm.

The Standard makes three fundamental decisions about how to account for derivatives:

- a) All derivatives should be reported on statements of financial position.
- b) All derivatives should be reported at fair value.
- c) How changes in the value of derivatives will affect earnings depends on the use of the derivatives.

If derivatives are reported at fair value, what are the hedge accounting issues that must then be resolved? The basic issues are:

1. Should hedge accounting (a specific departure from otherwise generally accepted accounting principles) be allowed at all? If no, the paper stops here and accounting practice takes a major step away from economic reality. FAS 133 gives a yes answer to this query.
2. What is necessary for a hedge to be eligible for hedge accounting?
  - a) The underlying items being hedged and the hedging instrument must be designated.
  - b) The hedging instrument and the hedged item must be qualified. It is necessary to define the items that will qualify. FAS 133 requires that the hedging instrument be a derivative.
  - c) The ex ante effectiveness of the hedge relative to risk reduction must be explained and the monitoring of risk reduction described in writing.
  - d) The ex post effectiveness of the hedge must be monitored over the life of the hedge.
  - e) Should the effectiveness of the hedge be judged by the risk reduction of the transaction or the effect on the risk

of the corporate entity? The transaction is the choice of FAS 133.

3. How should hedges be classified and how should earnings be affected by the different types of hedges? Should hedge accounting be allowed for all forecasted transactions?

Any solution is a balance between the objective of having the accounting record the transaction in a manner consistent with the economic characteristics of the transaction and the desire of the Standards Board to limit the amount of discretion available to a firm's management to manage earnings. There could be agreement that a specific transaction was a hedge deserving of hedge accounting treatment, but there could still be a rule that precludes hedge accounting because another firm could be using an almost comparable transaction to speculate and not hedge.

In a general sense hedge accounting is a set of rules aimed at determining when a gain or loss associated with a financial security associated with hedging should be included in earnings. Assume an accounting system where all value changes in derivatives immediately affect earnings, unless there is a hedge that qualifies for hedge accounting. Assume a firm is hedging (economically) an asset that is not a derivative and the hedged item has a non-recognized value change (a decrease in value) that is balanced economically by an increase in value of a derivative type hedging instrument. Without hedge accounting the gain on the derivative would be reported in this period and the loss (on the hedged item) in a future period. The objective of hedge accounting is to have the gain and loss of the hedging instrument and the hedged item reported in the same period if there is a valid hedge, and no additional complexities.

## ■ ELIGIBILITY FOR HEDGE ACCOUNTING

FAS 133 restricts hedge accounting to situations where the hedging instrument is a derivative (there is one exception involving a net investment denominated in a foreign currency where a non-derivative can be used). The FASB recognizes that financial instruments other than derivatives could be used to hedge, but it rejected the broader definition so that the distinction between hedging, investment, and speculation could be somewhat easier to make.

A written designation by the firm, complete with explanations, is required in order for the transaction to qualify for hedge

accounting. Both the hedging instrument and the hedged item must qualify for hedge accounting. For example, the hedging instrument must be a derivative and there are items that cannot be hedged. An operating lease cannot be designated as a hedged item in a fair value hedge (para. 454) but an operating lease could be designated as part of a cash flow hedge. An operating lease is an example of a liability (or an asset) whose fair value depends on many factors rather than one factor such as the level of interest rates.

Define an economic hedge to be a transaction where the gain or loss on the hedging instrument (limited by FAS 133 to be a derivative) is expected to be exactly balanced by a loss or gain (opposite to the resulting gain or loss on the hedging instrument) on the hedged item. In practice, the hedge will tend to be approximately effective rather than the gains and losses exactly balanced. For example, if the interest rate risk is being hedged, there is basis risk that will cause the hedge not to be perfect.

At the time of designation there must be a reasonable expectation that an economic hedge exists and there has to be an explanation as to how the effectiveness of the hedge is and will be evaluated over the life of the hedge.

In evaluating the effectiveness of a hedge one could reach a different conclusion depending on the frame of reference. The choices for the basis of evaluation of risk reduction are:

- a) transaction (the gain or loss on the specific hedged item is compared to the gain or loss on the hedging instrument)
- b) operating unit (the net gain or loss on the hedging instrument is related to the gain or loss of the unit's other operations)
- c) firm (the net gain or loss on the hedging instrument is related to the firm's other operations)

One could have an effective hedge of a specific hedged item, but if that transaction is looked at from the firm's perspective the hedge might be risk increasing. For example, a hedge might balance the gain or loss from owing Yen to a Japanese firm, but this hedge might neglect the fact that the corporation is scheduled to receive the same amount of Yen from a second Japanese firm. Thus from the transaction viewpoint there is risk reduction, but from the firm's viewpoint it is risk increasing. FAS 133 requires that a hedge be risk reducing from a transaction viewpoint. The transaction requirement is much simpler to implement than the risk reduction of the firm requirement. The FAS 133 rule is an example of a trade-off

between economic meaning and managerial discretion. The transaction viewpoint of FAS 133 is a reasonable compromise.

While FAS 133 requires that a hedge be risk reducing, it avoids the pitfall of requiring a specific correlation test. Rather there is applied a rule of reason (para. 62) "The appropriateness of a given method of assessing hedge effectiveness can depend on the nature of the risk being hedged and the type of hedging instrument used". There are at least 41 paragraphs of FAS 133 devoted to the assessment of hedge effectiveness.

## ■ CLASSIFICATION OF HEDGES

FAS 133 defines three types of hedges.

- a) Fair value hedge. This is a hedge of a recognized asset or liability or an unrecognized (for accounting purposes) firm commitment.
- b) Cash flow hedge. This is a hedge of the cash flows of a recognized asset or liability or of a forecasted transaction.
- c) Foreign currency hedge. This type of hedge is further classified as hedging:
  1. An unrecognized firm commitment (foreign currency fair value hedge)
  2. An available-for-sale security (foreign currency fair value hedge)
  3. A forecasted transaction (foreign currency cash flow hedge)
  4. A net investment in a foreign operation.

The classification of a hedge is important since it will affect the measures of the comprehensive income

Note that the hedging of a recognized asset or liability can be either a fair value hedge (if the value is being hedged) or a cash flow hedge (if the cash flows are being hedged). At the time of initiation of the hedge the nature of the hedge must be defined. The earnings measure is likely to be affected by the choice of classification.

Firm commitments and forecasted transactions result in different types of hedges. One possible rule would have been to require a firm commitment for any forecasted transaction that was to qualify for hedge accounting. Instead, the FASB decided that the firm only has to expect a transaction will take place for a hedge to qualify as a

cash flow hedge, but then limited the extent to which hedge accounting can be used for cash flow hedges.

Earnings are affected in different ways depending on whether the hedge is a fair value hedge or a cash flow hedge.

## ■ MEASURING EARNINGS: A FAIR VALUE HEDGE

With a fair value hedge the entire gain or loss of the hedging instrument (a derivative) is recognized in earnings in the period of change. For the hedged item, the change in value attributable to the risk being hedged is also recognized in earnings in the period of change and the accounting value of the hedged item is adjusted for the change. With a perfect hedge the gain and loss would be equal. If the hedge is not perfectly effective the gains and losses will not balance each other and earnings will be affected by the net difference.

For example, assume a bank is hedging a loan asset in a period where interest rates have gone up (the value of the loan has gone down) and the bank has a gain on the hedging instrument. The gain and loss exactly balance. But now assume the credit rating of the loan issuer has been enhanced by the retirement on favorable terms of other debt so that the loan value does not go down, in fact, it might go up in value. FAS 133 requires that the loss in the value of the loan from the interest rate increase should affect the earnings and the credit enhancement should not affect earnings since the latter was not hedged.

Only the gains and losses caused by the hedged risk should affect earnings as part of hedge accounting when the value change takes place. Separating the causes of value changes is likely to be a difficult task. The primary purpose of the separation-by-risk approach is to reduce earnings volatility. The operational concerns were noted by the FASB, but the decision was made to reduce earnings volatility, where that volatility would be the result of the new accounting rules combined with an economic event.

## ■ MEASURING EARNINGS: A CASH FLOW HEDGE

The gain or loss on the derivative designated as a cash flow hedge is reported as a change in other comprehensive income if it is

an effective hedge. The gain or loss of the portion of the hedge that is not effective is reported in earnings. The accumulated other comprehensive income effect is limited in amount to be consistent with the expected gain or loss on the hedged item or forecasted transaction.

The amounts in the accumulated other comprehensive income shall be reclassified into earnings in the same period during which the gain or loss on the hedged item affects earnings.

The fact that a hedge of a forecasted transaction results in a gain or loss that affects comprehensive income violates the basic principles of hedge accounting. The hedged forecasted transaction is defined to be a cash flow hedge, but if comprehensive income is a relevant income measure, the prescribed accounting is not hedge accounting.

Will the comprehensive income measure be used by the capital markets to determine a firm's value and management's performance? If no, then why bother with the comprehensive income calculation? If yes, then FAS 133 effectively does not allow hedge accounting for forecasted (expected) transactions for which there is not a firm commitment. While it is true that a derivative used as a hedging instrument for a forecasted transaction does not distort earnings, the value changes of the derivative do affect comprehensive income. This can be useful information when comparing the operating results of different firms.

Firm commitments and forecasted transactions both involve economic events that are not completed. Given that firm commitments and forecasted (expected) transactions are somewhat similar economically, the hedge accounting for both could be the same. Since a firm commitment results in a fair value hedge and a forecasted transaction in a cash flow hedge, the accounting for the gains and losses now differ. Paragraphs 323-325 give the FASB's logic for defining different accounting rules for firm commitments and forecasted transactions. The likelihood of a firm commitment being realized is very high. The likelihood of a forecasted transaction can be smaller, especially since management has the option to cancel a forecasted transaction. The cost of cancellation may be small. The derivative being used to hedge a forecasted transaction may be part speculation and part hedge.

With any effective cash flow hedge the gains and losses affect other comprehensive income and the stockholders' equity in the period of change rather than in the period when the change in value of the hedged item is recognized. This violates the basic objective



of hedge accounting of having the gain or loss on the hedging instrument be in the same period as the gain or loss on the hedged item, if the hedge is effective. Adjustment of the basis of the hedged item, assuming the value change can be justified, would have been more consistent with hedge accounting. The position of the FASB (para. 382) is that hedge accounting "for forecasted transactions is not conceptually supportable" thus FAS 133 "provide only limited hedge accounting for hedges of forecasted transactions...".

The fact that gains and losses of a cash flow hedge will affect other comprehensive income in the period of change in the value of the hedging instrument may result in increased volatility of comprehensive income as well as the stockholders' equity. There could be some confusion regarding the interpretation of the differences between the comprehensive income and the period's earnings.

If the objective is to record the gain or loss on the hedging instrument as it occurs because the matching gain or loss on the hedged may never occur (management has the option of affecting whether it will occur), then FAS 133 achieves this objective, at least as far as comprehensive income by including the gain or loss on the hedging instrument for a cash flow hedge.

If the objective is to have the accounting be perfectly consistent with the stated objectives of management (to hedge an anticipated transaction) then to the extent that comprehensive income influences investors, one of the objectives of hedge accounting is not achieved. The economic consequences of the hedging instrument affect comprehensive income before the effect on the hedged item (an anticipated transaction) is recorded.

The provisions associated a cash flow hedge have the effect of affecting management's ability to hedge and have the accounting exactly be consistent with the economic objectives of the hedge.

Let us assume that there are two identical firms. One firm hedges an anticipated transaction and has a \$100,000,000 loss on an interest rate swap. The second firm does not hedge. The first firm is inferior to the second firm because of the \$100,000,000 loss. Both firms have a likely \$100,000,000 gain on a forecasted transaction. FAS 133 requires that the \$100,000,000 loss affect comprehensive income thus reporting the inferior position of the first firm. While not good hedge accounting from a purist viewpoint, FAS 133 and the required comprehensive income effect result in useful information for comparing the two firms.

## ■ COMPREHENSIVE INCOME

Comprehensive income includes all changes in the stockholders' equity for a period except those changes resulting from additional investments by stockholders or distributions to stockholders. Comprehensive income includes net income and "other comprehensive income." Other comprehensive income consists of items included in comprehensive income but not included in net income. Among the items included in other comprehensive income are foreign currency translation adjustments and unrealized holding gains and losses on available-for-sale securities. For a more complete listing see FAS 130.

The cumulative comprehensive incomes are a separate component of stockholders' equity in a statement of financial position (called AOCI).

When other comprehensive income is ultimately included in net income it gives rise to a "reclassification adjustment," which is a deduction from that period's other comprehensive income. For example, assume there is a \$100 unrealized holding gain on an available-for-sale security in 1997. This is reported as other comprehensive income in 1997. In 1998 the \$100 gain is realized and affects net income. There would be a reduction of \$100 included in other comprehensive income in 1998 so that the net affect on 1998 comprehensive income is zero.

## ■ MEASURING EARNINGS: FOREIGN CURRENCY HEDGES

The gains and losses on a qualifying foreign currency fair value hedge shall be accounted for in the same manner as a fair value hedge that is not a foreign currency hedge. The gains and losses of the hedging instrument are recognized in earnings as they occur. The accounting for the gains and losses of the hedged item attributable to the risk being hedged are also recognized in earnings as they occur. With a perfectly effective hedge there is no net effect on earnings.

The gains and losses of a foreign currency cash flow hedge are accounted for in the same manner as a cash flow hedge not related to foreign currencies (the gain or loss on the hedging instrument is recognized in other comprehensive income if it is an effective

hedge). The gain or loss affects net income in the same period as the gain or loss on the hedged item is recognized (in this period the effect on other comprehensive income is reversed).

The foreign currency exposure of a net investment in a foreign operation may be hedged using either a derivative or a nonderivative financial instrument. The gain or loss on a designated qualified, effective hedging derivative instrument shall be reported as a translation adjustment (see FAS 52). A foreign currency transaction gain or loss on a nonderivative hedging instrument denominated in a foreign currency would be treated in the same manner (affecting comprehensive income) to the extent it is an effective hedge.

## ■ THE BALANCE SHEET EFFECT

FAS 133 requires that all derivatives be reported on the statements of financial position at fair value. Assuming reasonable measures of fair value this will be an improvement over the use of historical cost (a sunk cost and of little economic significance).

One complexity arises with a cash flow hedge. For example, assume the hedging of an anticipated transaction where the hedging derivative is written down by \$100,000,000 for a loss. There will be a \$100,000,000 gain from the anticipated transaction, but this is not recorded. Thus one balance sheet item is adjusted (the change in value of the derivative), but the second balance sheet item is not adjusted since it is not a derivative, in fact it might not be on the balance sheet at all. It would be useful to have the anticipated transaction described, but FAS 133 makes it clear that only the fair value of the derivative reflects the \$100,000,000 loss.

## ■ PROBLEMS OF VALUATION

FAS 133 requires the use of fair value for derivatives and the hedged item. Fair value is not always easily determined. It is feasible if there is a well-defined market value, but in the absence of a market value estimate, it might be necessary to resort to a valuation model. All valuation models require the estimate of at least one difficult to measure variable. For example, the Black-Scholes model requires an estimate of the standard deviation of possible outcomes.

In addition, some securities, such as those containing compound options (there are more than one option where the value of one option affects the value of the other option) are very difficult to value conceptually.

The determination of fair value is frequently an art rather than an exact science. There are obvious calculation and auditing complexities that are still unresolved.

## ■ THE TRANSITION

Transition adjustments related to a specific derivative instrument will be reported in net income, other comprehensive income, or allocated to both. The exact disposition will depend on the hedging relationship. Paragraph 52 of FAS 133 gives specific rules for determining the accounting for the derivatives in existence at the date of adopting FAS 133 (FAS 133 is effective after June 15, 1999).

Any adjustment reported as other comprehensive income will in some future year be reclassified as affecting net income.

FAS 133 should not be applied retroactively to financial statements of prior periods. Thus the financial analyst wanting comparable numbers through time may have to adjust the past measures of income to a basis consistent with FAS 133. In particular, the analyst will want the accounting for cash flow hedges and derivatives to be as consistent through time as feasible.

## ■ ISSUES REMAINING

FAS 133 goes a long way in resolving hedge accounting issues identified by the profession. However, inevitably potential issues still remain. These include:

- a) The restriction of the eligible hedging instrument to derivatives (except for hedging the foreign currency exposure of a net investment in a foreign operation with a financial instrument denominated in a foreign currency).
- b) The restriction of the items that can be hedged.
- c) The accounting for embedded derivatives.

- d) The effect of cash flow hedges on comprehensive income and the stockholders' equity.
- e) The different hedge accounting rules for firm commitments and forecasted transactions and for operating leases and insurance contracts.
- f) The accounting for forecasted transactions is not hedge accounting if comprehensive income is a relevant measure of performance and the basis of value calculations.
- g) FAS 133 is very complicated and is going to be difficult to apply.
- h) Only derivatives are reported at fair value. Should other financial instruments and liabilities also be reported at fair value? The IASC is likely to broaden the definition of an allowed hedging instrument.

The body of Statement of FAS 133 consists of 33 pages (56 paragraphs). The total pages of FAS 133 are 245 pages (540 paragraphs). There are going to be many disagreements regarding the details. The details are going to be very important to firms attempting to implement FAS 133.

All of the above issues are resolved by FAS 133 but it is likely that in the future one or more of these issues will be deemed to be worthy of reconsideration.

## CONCLUSIONS

FAS 133 is a major document in the evolution of accounting. It requires the reporting of all derivatives on the firm's statement of financial position at fair value. This is unambiguous and a major step in the move of accounting standards from historical cost to fair value, when feasible and useful.

Secondly, FAS 133 establishes a coherent framework for accounting for hedging activities. For fair value hedges there is an immediate effect on earnings of the gains and losses of both the hedging instrument and the item being hedged. With an effective hedge the accounting earnings effects are consistent with the economic motivations for the hedge, but there can be an earnings effect if the hedge is not perfect. For cash flow hedges where the gains and losses of the hedged item are more difficult to estimate and the firm has the de facto option of canceling the anticipated transaction, with an effective hedge the gains and losses of the hedging

instrument are initially recognized in other comprehensive income (outside the earnings) and are subsequently reclassified into earnings when the gain and loss of the hedged item affects earnings. The cash flow hedge procedure allows a form of hedge accounting for anticipated transactions for earnings even where there is not a firm commitment, but the gains and losses of the hedging instrument are recorded in comprehensive income, and to the extent that the comprehensive income of a single period is used for performance evaluation and for an input into the valuation of the firm, an objective of hedge accounting is being violated, if the objective is to match the periods of gain and loss recognition of the hedging instrument and the hedged item. With some multi-period models, the matching issue does not create a problem, but for other methods of valuation (for example, using a P/E multiplier) it does.

Looked at from a general long-term and general industry perspective, FAS 133 lays the foundation for improved accounting practices. One important problem remaining involves the accounting for cash flow hedges. There are other problems in the details and in the problems of specific industries. We can expect that the basic foundation for hedge accounting laid by FAS 133 to survive for a long time, but that changes will be forthcoming to resolve the issues involving comprehensive income and to modify the details of FAS 133. The FASB attempted to make the accounting of hedging activities consistent with the economic characteristics of the transaction, but the Board also attempted to limit the amount of discretion available to a firm's management to manage earnings. The future will reveal whether or not they achieved the proper balance.

We do not know exactly how FAS 133 will affect the extent of a firm's hedging activities, but given the fact that cash flow hedges will affect other comprehensive income one can speculate that there may be dampening of hedge activities compared to an accounting process that was more generous with regard to deferral of gains and losses.

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