

ALTERNATIVE HEDGE ACCOUNTING TREATMENTS FOR FOREIGN EXCHANGE FORWARDS

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Four possible hedge accounting treatments for a foreign currency forward contract used to hedge a purchase of equipment are illustrated. In addition to journal entries illustrating the accounting, the pros and cons of the alternative treatments are discussed.

Keywords: Derivatives; hedge accounting; Statement of Financial Accounting Standards No. 133; foreign exchange hedging.

1. Introduction

The accounting standard for derivative instruments, FAS 133,¹ is widely recognized to be one of the most complex statements ever issued. Part of the reason for this assessment is that derivatives are generally viewed as being somewhat exotic, and they tend to be used only by the more sophisticated financial managers. Adding to the perception is the fact that these new rules permit different accounting treatments for a given transaction. In this article, we focus on one such situation. Rather than illustrating one acceptable accounting treatment, we demonstrate a variety of accounting treatments that might be used for a common business transaction. In addition, we discuss the benefits and costs of the alternatives presented. In the business transaction we

examine, a company enters into a contract to buy equipment from a foreign supplier, where the ultimate payment date is scheduled for some date following the purchase date.²

A common risk management solution would be to enter into a forward contract to lock in the exchange rate, where the value date for the forward contract would correspond to the prospective cash settlement date. Virtually all companies that choose to hedge exposures like this will strive to qualify for hedge accounting.³ However, at least four different accounting treatments are acceptable. We discuss each of these four treatments in detail, including a demonstration of appropriate accounting entries under each method. Throughout the article, we parenthetically reference the paragraphs in the standard or DIG issues that provide authoritative support for

¹FAS 133, *Accounting for Derivative Instruments and Hedging Activities*, was amended by FAS 138, *Accounting for Certain Derivative Instruments and Certain Hedging Activities*, and FAS 149, *Amendment of Statement 133 on Derivative Instruments and Hedging Activities*. We use “FAS 133” to refer to the combined set of standards including FAS 133, 138, 149, and cleared DIG issues.

²Although our example deals with a purchase of equipment, followed by the recording of an account payable, the analogous issues arise in the case of the sale of finished goods, followed by the recording of an account receivable.

³The body of the article assumes the company has met the criteria needed to qualify for hedge accounting. A brief discussion of the requirements to qualify for hedge accounting is provided in the appendix.

the treatment suggested. (Generally, we provide these references only on the first occasion that a paragraph is referenced, to improve readability.) The article concludes with an assessment of the relative features of the respective treatments.

2. Market Information

Our example assumes that on April 5, a US entity with a calendar year-end decides to purchase equipment priced at €5 million from a European supplier. At the same time, the entity enters into a currency forward contract to hedge the risk of exchange rate variability. The prospective purchase date is July 12, but the expected payment is scheduled for September 27. Thus, the value date of the forward is set for September 27. Hypothetical data relevant to the analysis are presented in Table 1.

2.1. Method 1

Under the first method, only the purchase of the equipment (scheduled for July 12) is designated

as the hedged item in a cash flow hedge (§28). Effectiveness is measured by comparing the change in the 9/27-forward contract to changes in the value of a “hypothetical forward” (DIG Issue G7) — that is, a forward contract that perfectly matches the size and timing of the risk being hedged, which, in this case, is a forward contract having a July 12 value date. Up through the purchase (i.e. July 12), cumulative gains or losses on the 9/27-forward that are no larger (in absolute value) than the cumulative gains or losses of the hypothetical forward are deemed to be effective and are posted to other comprehensive income (OCI). Any residual results are ineffective and are reported in earnings (§18(c) and 30, especially 30(b) and 30(c)). Amounts deferred in accumulated OCI (AOCI) up through July 12 are reclassified to earnings coincidentally with the earnings impact of the hedged purchase. In the current example, this reclassification is accomplished through depreciation, in a fashion consistent with the straight line depreciation method used to recognize depreciation on the equipment itself⁴ (§31).

Table 1. Market data for valuation of forward contracts.

	Initiation of hedge	End of 2nd quarter	Purchase date	Ultimate settlement date
Trade (or valuation) date	Apr 5	Jun 30	Jul 10	Sep 25
Spot value date	Apr 7	Jul 2	Jul 12	Sep 27
Spot exchange rate	0.8400	1.0200	0.7600	1.0400
Forward exchange rate to 9/27	0.8358	1.0159	0.7577	1.0400
Present value factor to 9/27	0.9800	0.9900	0.9930	1.0000
Basis for 9/27 forward	-0.0042	-0.0041	-0.0023	0.0000
Forward exchange rate to 7/12	0.8378	1.0195	0.7600	NA
Present value factor to 7/12	0.9891	0.9991	1.0000	NA
Fair value of 9/27-forward	0	891,495	(387,767)	1,021,000
Fair value of 7/12-forward	0	907,682	(389,000)	NA
<i>Period-to-period value changes</i>				
9/27-forward		891,495	(1,279,262)	1,408,767
7/12-forward		907,682	(1,296,682)	NA
<i>Cumulative value changes</i>				
9/27-forward		891,495	(387,767)	1,021,000
7/12-forward		907,682	(389,000)	NA

Size of the forward contract = 5,000,000 euros; all exchange rates are stated as dollars per euro.

⁴The treatment would differ for hedges of forecasted purchases of goods or services used as inputs to some finished goods or for hedges of forecasted sales. Specifically, for hedges of purchases of inputs used for some finished goods, the reclassification of OCI occurs with the sale of the finished goods — i.e. when the income effect of the hedged item is realized. In contrast, reclassifications for hedges of forecasted sales would occur coincidentally with the sales.

No accounting entries are required at the inception of the hedge (April 5), as the forward contract has a fair value of zero. On June 30, however, the forward contract must be marked to its fair value, \$891,495. This amount reflects the present value of the price change of the 9/27-forward from April 5 through June 30. In the first accounting period, this change in fair value is identical to the fair value, itself. Over the same period, the hypothetical forward would have increased in value by \$907,682; and given that the actual hedging derivative's result is a smaller absolute value, the full \$891,495 gain is recorded in OCI. Nothing is recorded in current earnings.

June 30

Forward contract	891,495	
OCI		891,495

Although no income effect is realized in this example, this outcome should not be generalized. That is, under a different set of assumed exchange rates, the change in the value of the more distant forward *might* be greater than the change in the value of the closer forward, in which case the difference *would* show up in income.

When July 12 arrives, the purchase of the equipment and the corresponding payable are recorded with the dollar values based on the then prevailing spot exchange rate (\$0.7600). Also, the 9/27-forward contract is marked to market. Again, the amount deferred through OCI is determined by comparing the cumulative change in fair value of the 9/27-forward to that of the hypothetical 7/12-forward; and, in this instance, as before, the full change in the value of the forward contract, \$1,279,262 is posted to OCI.

July 12

Equipment	3,800,000	
Accounts payable		3,800,000
OCI	1,279,262	
Forward contract		1,279,262

Critically, the 9/27-forward contract is still maintained as an open position after the July 12 purchase date. It serves as an economic hedge of the still-to-come settlement, but no special hedge accounting is applied after July 12. That is, after July 12, gains or losses on the payable associated with changes in the spot exchange rate go to earnings, as do changes in the value of the open forward contract position⁵ (¶18(a)).

On September 27, three steps are required. First, the payable and forward contract are adjusted to reflect changes in exchange rates. The amounts will not be entirely offsetting, as the payable is adjusted based on changes in spot, while the forward's change in fair value reflects both changes in the forward rate and changes in the discount factor. Next, the forward contract is closed out on the balance sheet. And, finally, the payable is settled, using the proceeds of the forward contract.

September 27

Transaction loss	1,400,000	
Accounts payable		1,400,000
Forward contract	1,408,767	
Earnings		1,408,767
Foreign currency	5,200,000	
Forward contract		1,021,000
Cash		4,179,000
Accounts payable	5,200,000	
Foreign currency		5,200,000

To complete the accounting for this transaction, quarterly depreciation and reclassification entries are needed for the third quarter and the remaining 39 quarters of the equipment's life.⁶ We assume that the equipment will be used 40 quarters and will have no salvage value. In this case, the quarterly depreciation on the equipment, per se, is \$95,000, and the reclassification of the \$387,767 debit balance in AOCI⁷ adds *another*

⁵In fact, the standard permits this exposure to be identified as a new hedged item — either in a cash flow or fair value hedging relationship. Still, no special hedge accounting is required, as “normal accounting” records the currency effects through earnings for both the exposure and the derivative, anyway. The currency effects may not be exactly offsetting, but given the relatively short time to settlement of the payable and the forward contract, the difference should be small, representing only the interest rate differential on the two currencies.

⁶We assume the company's policy is to record a full quarter's depreciation in the period of acquisition.

⁷Credit of 891,495 recorded 6/30 and debit of 1,279,262 recorded 7/12.

\$9,694 per quarter to depreciation expense for 40 quarters.⁸ The following depreciation and reclassification entries will be made on September 30 and the following 39 quarters.

September 30	
Depreciation expense	95,000
Accumulated depreciation	95,000
Depreciation expense	9,694
Reclass. adjust. (OCI)	9,694

The income statement effects of this method of accounting for the hedged transaction are summarized in Table 2 (credits are in parentheses). Note that “NA” means there would never be an amount on the respective line during the period, regardless of the realized exchange rate changes, while a zero indicates that, given the exchange rates assumed in this example, there was no effect on this line, but a different result might be realized with a different set of exchange rates.

The initial contributions to earnings may arise from four sources: (a) ineffective results from designated hedges; (b) full fair value changes from derivatives *not* designated as hedges; (c) changes in value of assets or liabilities denominated in a currency other than the functional currency; and (d) depreciation. Also

shown in Table 2 are the values related to the OCI allocations and reclassifications.

2.2. Method 2

In the second method, the hedged item is, again, the purchase of the goods, and the hedge is treated as a cash flow hedge; but in this case changes in the spot/forward differential are excluded from the assessment of hedge effectiveness (§30(a) and 63(c)). Assuming the notional amount of the forward matches that of the exposure (as would be typical), this election requires that over the period for which the hedging relationship persists, derivative results due to the change in spot exchange rates go to OCI, while results due to changes in the forward points go to earnings (§30(a) and 63). As in the prior method, the derivative is maintained *after* the purchase though the settlement date, during which time no special hedge accounting is used. Journal entries illustrating the accounting for this alternative follow.

June 30	
Forward contract	891,495
Earnings (change in forward points)	495
OCI (change in spot rates)	891,000

Table 2. Earnings and OCI effects under method 1.

	Quarter ending 6/30	Quarter ending 9/30	Remaining 39 quarters
<i>Earnings</i>			
Derivative (gains)/losses			
Ineffectiveness (pre-7/13)	0	0	NA
No hedge designation (post-7/12)	NA	(1,408,767)	NA
Transaction loss (post-7/12)	NA	1,400,000	NA
Depreciation (including OCI reclass.)	NA	104,694	104,694
Net earnings impact	0	95,927	104,694
<i>OCI</i>			
Hedging (gains)/losses (pre-7/13)	(891,495)	1,279,262	NA
Reclass. adjust.	NA	(9,694)	(9,694)
Net OCI impact	(891,495)	1,269,568	(9,694)

⁸Note that FAS 133 does not indicate the earnings account to be used to offset the reclassification adjustment. We choose to use depreciation expense since the deferred amounts relate to the hedge of a purchase of equipment, whose earnings impact occurs through depreciation.

July 12		
Equipment	3,800,000	
Accounts payable		3,800,000
OCI (change in spot rates)	1,288,200	
Earnings (change in forward pts.)		8,938
Forward contract		1,279,262

All remaining entries for September 27, September 30, and subsequent quarters follow the example of method 1 (i.e. all changes in the value of the forward go to earnings). The magnitudes of the reclassification entries will differ slightly from method 1, however, reflecting a debit of \$397,200 in AOCI, rather than \$387,767. Thus, the entry made September 30 and at the end of the 39 subsequent quarters will be the following:

September 30		
Depreciation expense	9,930	
Reclass. adjust. (OCI)		9,930

The income statement effects of this method of accounting for the hedged transaction are summarized in Table 3 (credits are in parentheses). In this case, the component of the derivative's result that is excluded from the assessment of hedge effectiveness (i.e. the component attributable to the change in the forward discount) is recorded in earnings.

2.3. Method 3

In contrast to methods 1 and 2, method 3 relies on the assumption that the exposure satisfies the definition of a firm commitment, such that fair value hedge accounting may be employed⁹ (¶21(a)). Under the fair value hedging model, the hedging derivative is marked to fair value through earnings; and the carrying value of the hedged item is also adjusted to reflect the change in value due to the risk being hedged (¶18(b) and 22). Because the gains or losses of the hedged item are accelerated through income, the method of assessing effectiveness will not bear on the accounting per se, but to ensure that hedge accounting will be permitted throughout the prospective hedge horizon (i.e. to preclude being deemed ineffective, *ex post*), it is recommended that changes in the spot-forward differential should be excluded from the effectiveness assessment (¶20(a)(2)). The documentation should also stipulate that the change in value of the firm commitment will be based on the change in spot prices, similar to the method used to determine transaction gains and losses on foreign-currency-denominated receivables and payables. Critically, this method of valuation of the gain or loss associated with the firm commitment differs from the method shown in FAS 133, Example 3 in Appendix B (¶121–126). In Example 3, the change in the value of the firm commitment is determined by applying a present

Table 3. Earnings and OCI effects under method 2.

	Quarter ending 6/30	Quarter ending 9/30	Remaining 39 quarters
<i>Earnings</i>			
Derivative (gains)/losses			
Excluded from determination of effectiveness (pre-7/13)	(495)	(8,939)	NA
No hedge designation (post-7/12)	NA	(1,408,767)	NA
Transaction loss (post-7/12)	NA	1,400,000	NA
Depreciation (including OCI reclass.)	NA	104,930	104,930
Net earnings impact	(495)	87,225	104,930
<i>OCI</i>			
Hedging (gains)/losses (pre-7/13)	(891,000)	1,288,200	NA
Reclass. adjust.	NA	(9,930)	(9,930)
Net OCI impact	(891,000)	1,278,270	(9,930)

⁹If a transaction denominated in a foreign currency meets the definition of a firm commitment, DIG Issue H5 clarifies that it could be designated as the hedged item in either a fair value or a cash flow hedge.

value factor to changes in the commitment's forward price. We believe our suggested methodology to be (a) acceptable, in that the guidance does not prescribe any single method for calculating value changes, and (b) preferable, in that it insures that the hedge will be perfectly effective because the spot price change associated with the forward is identical to the spot price change associated with the firm commitment.¹⁰ Effectiveness may *not* be assumed, however, under the methodology of Example 3, where the forward price associated with the commitment differs from the forward price associated with the hedging derivative. It should be noted, however, that under our suggested treatment, although the hedge can be said to be perfectly effective, the two contributions to earnings will *not* be equal and offsetting. A difference arises because the fair value calculation for the forward contract employs a present value factor and uses changes in forward rates, while the calculation for the firm commitment does not use a present value factor, and uses changes in spot rates. Under our approach, on June 30, the 9/27-forward contract must be marked to fair value, \$891,495; and the loss on the firm commitment is $((0.8400 - 1.0200) \times 5,000,000) = \$900,000$.

June 30

Forward contract	891,495
Gain on forward contract	891,495
Loss on firm commitment	900,000
Firm commitment	900,000

When July 12 arrives, the 9/27-forward contract and the firm commitment are again marked to market. As before, the amount recorded for the firm commitment is determined by reference to the change in spot rates.

July 12

Loss on forward contract	1,279,262
Forward contract	1,279,262

Firm commitment	1,300,000
Gain on firm commitment	1,300,000

Also on July 12, the purchase of the equipment is recorded. Accounts payable is recorded at the spot exchange rate. The firm commitment is reversed, with the book value of the equipment balancing the entry. Given the spot exchange rate of \$0.7600 per euro on July 12, the following entry applies:

July 12

Equipment	4,200,000
Firm commitment	400,000
Accounts payable	3,800,000

Note that the equipment is booked at the 4/5 *spot* price of $0.8400 \times \text{€}5,000,000$. Subsequent accounting for the forward contract and the account payable will follow exactly the accounting shown under methods 1 and 2. However, with the fair value hedging model, there will never be any reclassification entries pertaining to OCI. The equipment is simply booked at \$4,200,000, and depreciation in future periods is recorded based on that booked value. Thus, periodic depreciation expense will be \$105,000.

The income statement effects of this method of accounting for the hedged transaction are summarized in Table 4 (credits are in parentheses).

Besides the accounting entries, FAS 133 also requires the disclosure of any components of the derivative's gain or loss excluded from the assessment of hedge effectiveness. The values for the quarters ending 6/30 and 9/30 are \$495 and \$8,939, respectively.¹¹

2.4. Method 4

Finally, the fourth approach is authorized by paragraph 36A and illustrated more fully in DIG

¹⁰The presumption of being perfectly effective requires that the notional of the forward must match the foreign currency exposure (as it does in this case).

¹¹ $495 = 5,000,000 \times (-0.0041 + 0.0042) \times 0.9900$; and $8,939 = 5,000,000 \times (-0.0023 + 0.0042) \times 0.9930 - 495$. Note that the election to exclude items from the hedge effectiveness assessment only applies during the period for which the hedging relationship exists.

Table 4. Earnings and OCI effects under method 3.

	Quarter ending 6/30	Quarter ending 9/30	Remaining 39 quarters
<i>Earnings</i>			
Derivative (gains)/losses			
During hedge period (pre-7/13)	(891,495)	1,279,262	NA
No hedging designation (post-7/12)	NA	(1,408,767)	NA
Gain/loss on firm commitment (pre-7/13)	900,000	(1,300,000)	NA
Transaction loss (post-7/12)	NA	1,400,000	
Depreciation	NA	105,000	105,000
Net earnings impact	8,505	75,495	105,000

issue H15.¹² Under this method, the company designates the forward contract as the hedging instrument for both the forecasted purchase and the subsequent settlement. The H15 methodology requires changes in forward prices to be decomposed into two parts — gains or losses due to (a) changes in spot prices and (b) changes in the spot-forward differential. While the allocation of spot price effects are market determined, allocations relating to the spot-forward differential are made by formula, using the following three-step procedure.¹³

1. Given the starting spot exchange rate (S) and the starting forward exchange rate associated with the hedging derivative (F), solve for the implied interest rate (r) in the following equation:

$$F = S(1 + r)^d$$
where d is the number of days between the spot value date and the forward value date.
2. Given r , calculate F' from the following equation:

$$F' = S(1 + r)^{da}$$
where da is the number of days between the spot value date and the purchase date.
3. Given F' , the portion of the starting spot-forward differential to be allocated to the

hedge of the forecasted purchase or sale is $F' - S$; and the balance (i.e. $F - F'$) is allocated to the hedge of the settlement.

To qualify for H15 treatment, the value date of the forward contract must match the expected settlement date of the payable and the notional amount of the forward must match the amount of foreign currency payable. Moreover, the forward contract must be intended to address *all* of the variability in functional currency cash flows associated with the transaction to be allowed use of this method. These conditions met, as they are in this example, all changes in value of the forward contract throughout the entire, combined hedge (i.e. through the final settlement of the forward) are initially posted to OCI. Then, when it is time to reclassify AOCI, two distinct reclassifications must be scheduled: the first relating to the purchase, and the second relating to the ultimate settlement. The underlying data for the current example are presented in Table 5.¹⁴

The portion of AOCI that pertains to the purchase will reflect the changes in the forward contract due to spot price changes that occur *up until* the purchase date plus the formulaic allocation of the initial spot-forward differential.

¹²See <http://www.fasb.org/derivatives/issuindex.shtml> for the complete presentation of Derivatives Implementation Issue (DIG) H15, as well as all other DIG issues. The DIG is a task force established by FASB to “assist the FASB in answering questions that companies will face when they begin implementing Statement 133.”

¹³In fact, H15 allows for the prospect of using alternative methods for allocating the effects of the initial basis, besides the interest method shown here. For example, consider the extreme case of the hedge of a sale (with a subsequent accounts receivable). Assume the starting spot-forward differential is zero such that the only income effects come from changes in the spot rate. Assume further that all of the change in the spot exchange rate occurs prior to the sale. The value of the forward will continue to change after the sale date solely because the present value factor will continue to accrete to unity. Thus, some small effect of the spot change that occurs *prior* to the sale date will be realized in earnings *after* the sale date.

¹⁴Some rounding error may be present in the data.

Table 5. Allocation of original basis to purchase and accounting periods subsequent to purchase.

<i>Dates</i>	
Hedge initiation, spot value date	Apr 7
Purchase date	Jul 12
Final settlement date	Sep 27
Value date of forward contract	Sep 27
<i>Horizons</i>	
Hedge-to-purchase	96 days
Purchase-to-settlement	77 days
Hedge-to-settlement	173 days
<i>Exchange rates (at hedge initiation)</i>	
Spot	\$0.8400 per euro
Forward	\$0.8358 per euro
Basis	\$(0.0042) per euro
<i>Calculations</i>	
r	-0.0029%
F' (purchase date)	\$0.8377
<i>Basis allocations</i>	
For the purchase	\$(0.0023)
For the final settlement	\$(0.0019)
<i>Spot price changes</i>	
Hedge initiation to purchase date	-0.0800
Purchase date to settlement	0.2800

Any remaining amount in AOCI would be reclassified over the period between the purchase and the settlement.¹⁵

Returning to the formulaic allocation of the initial spot-forward differential, we make this division relying on data presented in Table 5. The amount deferred in AOCI attributable to the purchase comprised of two pieces. The first relates to the change in spot rates between hedge inception and the purchase, in this case a debit of \$400,000 ($= (0.76 - 0.84) \times 5,000,000$); and the second is the basis allocated to the hedge of the purchase, a credit of \$11,500 ($= 0.0023 \times 5,000,000$). They combine for a net debit deferred in AOCI of \$388,500, which will be reclassified as additional depreciation expense over the life of the equipment.¹⁶ The amount deferred in AOCI relevant to the settlement is determined

residually. Thus, given that the full OCI contribution was a credit balance of \$1,021,000, the portion appropriate to the settlement, per se, is a credit to income of \$1,409,500. The journal entries relevant to this accounting alternative are presented below. Again, changes in the value of the forward come from Table 1.

Since all changes in the value of the forward may be assumed to be effective, all changes are initially recorded in OCI.

June 30	
Forward contract	891,495
OCI	891,495

On July 12, the purchase and accounts payable are recorded, based on the July 12 spot exchange rate, and the forward contract is marked to fair value through OCI.¹⁷

July 12	
Equipment	3,800,000
Accounts payable	3,800,000
OCI	1,279,262
Forward contract	1,279,262

On September 27, the forward contract is marked to market, again entirely through OCI, with the following journal entry.

September 27	
Forward contract	1,408,767
OCI	1,408,767

Also on September 27, the forward contract is closed, the payable is marked to spot, and reclassification of OCI pertaining to the settlement, per se, is required. The \$1,409,500 reclassification adjustment consists of two pieces. The portion due to the change in spot exactly offsets the transaction loss. The remaining \$9,500

¹⁵Note that if the reclassification of OCI relating to the purchase occurs prior to the settlement of the forward contract, a small component of the effect from a spot exchange rate change that occurs *prior* to the purchase will be reflected in earnings during the interval between the purchase and the settlement, due to a further accretion of the present value factor toward unity.

¹⁶With a different set of assumed exchange rates, the net amount deferred in AOCI might instead be a credit, which would be reclassified to *reduce* depreciation expense over the life of the equipment.

¹⁷Note that the entry marking the forward contract to fair value is not necessary at this point; it could be deferred to the settlement date.

represents the basis allocation related to the settlement.

September 27

Transaction loss	1,400,000
Accounts payable	1,400,000
Reclassification adjustment (OCI)	1,409,500
Transaction loss	1,409,500

Finally, on September 30, depreciation expense is recorded. Since depreciation is the earnings impact of the hedged item in a cash flow hedge, a reclassification adjustment entry is also needed. The net debit of \$388,500 in AOCI, pertaining to the purchase, is reclassified equally over 40 quarters, resulting in an additional depreciation expense of \$9,712 each quarter.

September 30

Depreciation expense	104,712
Reclassification adjustment (OCI)	9,712
Accumulated depreciation	95,000

The income statement effects of this method of accounting for the hedged transaction are summarized in Table 6 (credits are in parentheses).

3. Comparison of Alternatives

In this article, we posed four distinct approaches to accounting for the hedge of a foreign exchange exposure that results in a recognized payable or receivable. The features of these respective alternatives are summarized in Table 7.

Table 8 summarizes earnings and OCI impacts of all four alternatives for the periods ending 6/30, 9/30, the following 39 quarters, and in total.

When all is said and done, given that the same derivative is used in all of these cases, the total income effect over the life of the hedge and purchased equipment will be the same. But the periodic income effects will differ across the various methodologies. Depreciation amounts may also differ, although this variability is not likely to be material.

For method 1, the hedging derivative and the hypothetical derivative are not the same, so at least some ineffectiveness may result. Thus, some degree of unanticipated income volatility may be realized, relating to the changes in the difference between the forward prices for the actual derivative and the hypothetical derivative, respectively. More problematic, however, is the fact that this method suffers from the very real prospect that the hedge may fall out of effectiveness. This

Table 6. Earnings and OCI effects of method 4.

	Quarter ending 6/30	Quarter ending 9/30	Remaining 39 quarters
<i>Earnings</i>			
Transaction loss (post-7/12)	NA	1,400,000	NA
Depreciation (excluding reclassification amount)		95,000	95,000
Reclassifications related to purchase, recorded as depreciation expense		9,712	9,712
Reclassifications related to settlement		(1,409,500)	
Net earnings impact	NA	95,212	104,712
<i>OCI</i>			
Hedging (gains)/losses	(891,495)	(129,505) ^a	NA
Reclass. adjust.	NA	1,399,788 ^b	(9,712)
Net OCI impact	(891,495)	1,270,283	(9,712)

^a1,279,262 debit recorded 7/12 plus 1,408,767 credit recorded 9/27.

^bThis net debit of 1,399,788 to OCI consists of a 9,712 credit, and a 1,409,500 debit. The 9,712 credit is related to the purchase, and is balanced by a 9,712 debit increasing depreciation expense; the 1,409,500 debit is related to the settlement, and is balanced by a 1,409,500 credit to earnings. The account(s) used for the credits are not specified by the standard. We used Transaction loss for the entire 1,409,500, to emphasize that the entire reclassification relates to the hedge of the settlement.

Table 7. Summary of hedging alternatives.

Method	Risk being hedged	Hedge type	Effectiveness assessment
1	The uncertain cash flow associated with the forecasted purchase.	Cash flow	Results of the hedging derivative are compared with those of a hypothetical derivative.
2	The uncertain cash flow associated with the forecasted purchase.	Cash flow	Changes in the spot-forward differential are excluded from the assessment of hedge effectiveness.
3	Changes in the fair value of the firm commitment to purchase equipment.	Fair value	Changes in the spot-forward differential are excluded from the assessment of hedge effectiveness. The value of firm commitment is determined based on changes in spot.
4	The uncertain cash flows associated with the forecasted purchase <i>and</i> the settlement of the resulting payable.	Cash flow	Perfect effectiveness may be assumed if qualifying criteria are satisfied.

Table 8. Summaries of earnings and OCI effects of all four methods.

	Quarter ending 6/30	Quarter ending 9/30	Remaining 39 quarters	Total
<i>Alternative 1 (summarizes Table 2)</i>				
Net earnings impact	0	95,927	104,694	4,178,993 ^a
Net OCI impact	(891,495)	1,269,568	(9694)	(7) ^a
<i>Alternative 2 (summarizes Table 3)</i>				
Net earnings impact	(495)	87,225	104,930	4,179,000
Net OCI impact	(891,000)	1,278,270	(9930)	0
<i>Alternative 3 (summarizes Table 4)</i>				
Net earnings impact	8,505	75,502	105,000	4,179,007 ^a
Net OCI impact	NA	NA	NA	NA
<i>Alternative 4 (summarizes Table 6)</i>				
Net earnings impact	0	95,212	104,712	4,178,980 ^a
Net OCI impact	(891,495)	1,270,283	(9712)	20 ^a

^aThese numbers differ from 4,179,000 and 0 due to rounding.

prospect, in and of itself, should rule out this approach.

Method 2 circumvents the problem of falling out of effectiveness by excluding the changes in the spot-forward differential from the hedge effectiveness assessment. In so doing, however, the magnitudes of the income consequences may be expected to be somewhat larger than those realized under method 1, *as long as method 1 continues to qualify for hedge accounting*. That is, it is likely that the variability associated with the difference between the forward price of the hedging derivative and the forward price of the hypothetical derivative will be somewhat less volatile

than the entire forward premium of the hedging derivative.

Like method 2, method 3 — which is restricted only to those cases where the exposure satisfies the definition of a firm commitment — also preserves the “perfect effectiveness” of the hedge by excluding changes in the hedge spot-forward differential from the determination of hedge effectiveness. Application of the fair value hedging model, however, has no impact on OCI, whatsoever. Moreover, method 3 has the added benefit of simplicity, in that the requirement to disclose a schedule of OCI reclassifications would not apply. Still, some

income volatility will be realized under this method.¹⁸

Finally, method 4 has the characteristic that the hedge may be assumed to be perfect, such that all gains or losses are posted to OCI. Thus, no unanticipated income volatility arises. On the downside, while income volatility is contained, volatility of OCI is not. Moreover, on a practical level, method 4 is the most computationally challenging, as it requires a formulaic allocation of the starting spot-forward differential between the two component risks being hedged.

The choice of which of these methods should be used should depend on (a) the prospective amount of volatility to income and/or OCI and (b) the likelihood that hedge effectiveness will not be realized. The prospect of falling out of effectiveness is, in these authors' judgment, sufficient cause for excluding method 1 from consideration. With respect to the question of which of the remaining three methods should be applied, we cannot be so definitive. Given the various tradeoff considerations, the "best" choice may be somewhat of a subjective judgment. But it is a choice that should be made with some thought, rather than assuming that all acceptable methods will give identical results.

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Appendix: Qualifying for Hedge Accounting

The hedge accounting treatments discussed in the body of the article assume that the entity has met all requirements to be eligible to use hedge accounting.¹⁹ This appendix summarizes the criteria for qualification for hedge accounting presented in paragraphs 20, 21, 28, 29, and 40 of FAS 133, as amended by statements 138 and

149. The reader is directed to the standard for a more detailed treatment of hedge accounting qualification criteria. Paragraphs 20 and 21 set out the requirements for qualifying for fair value hedge accounting; paragraphs 28 and 29 set out similar requirements for qualifying for cash flow hedge accounting. Paragraph 40 provides criteria for fair value and cash flow foreign currency hedges in addition to the more general criteria for fair value and cash flow hedges provided in paragraphs 20, 21, 28, and 29.

Paragraphs 20 and 28 stipulate the criteria that must be met by the hedging relationship, for fair value and cash flow hedges, respectively. Because they are almost identical paragraphs, they will be treated together. First, the hedging relationship must be documented. This documentation must include the entity's risk management objective and strategy for undertaking the hedge, including identification of the hedging instrument, the hedged item, the nature of the risk being hedged, and how the hedging instrument's effectiveness in offsetting the exposure to changes in the hedged item's fair value or cash flows "attributable to the hedged risk will be assessed" (¶20(a); almost identical language is at 28(a)). This documentation would also include (for method 3 in the text) "a reasonable method for recognizing in earnings the asset or liability representing the gain or loss on the hedged firm commitment" (¶20(a)(1)) and what components of the change in the hedging derivative's value are excluded from assessment of effectiveness (for methods 2 and 3).

The second general criterion for hedge accounting qualification in paragraphs 20 and 28 is that "[b]oth at inception of the hedge and on an ongoing basis, the hedging relationship is expected to be highly effective in achieving offsetting changes in fair value" or cash flows "attributable to the hedged risk during the period that the hedge is designated" (¶20(b); almost identical language is at 28(b)). Note that

¹⁸Income volatility arises because the change in a spot rate (used to value the firm commitment) is *not* the same as the present value of the change in associated forward rates (used to value the gain or loss on the currency forward contract).

¹⁹It is important to distinguish between hedging and qualifying for hedge accounting. FAS 133 does *not* prohibit a company from engaging in any type of hedging activity that it sees as being appropriate. FAS 133 only limits the use of special hedge accounting to situations where those hedging transactions meet specified criteria.

this criterion really has two parts. First, even before the hedging relationship has commenced, there must be a *prospective* expectation that the relationship will be effective. Throughout the hedge period, this expectation of effectiveness must continue to be met. In addition, “at least every three months” (§21(b) or 28(b)), the company must assess *actual* effectiveness.

Paragraphs 21 and 29 specify what may be designated as hedged items and hedged risks in fair value and cash flow hedges, respectively. Paragraph 21 stipulates that an unrecognized firm commitment (method 3) may be designated as the hedged item in a fair value hedge. The glossary (§540) specifies that the fixed price required for a firm commitment may be stated in the entity’s functional currency, or in a foreign currency. Paragraph 29 states that a forecasted transaction that is probable of occurring may be designated as the hedged item in a cash flow hedge. Further, to be designated as a hedged item in either a fair value or cash flow hedge, the item must be subject to variability in fair value or cash flow due to the identified risk that could affect reported earnings. However, the asset, liability, or firm commitment, or the asset or liability to be acquired in the forecasted transaction, cannot be one that is “remeasured with changes in fair value attributable to the hedged risk reported

currently in earnings” (§29(d); almost identical language is at 21(c)). Finally, paragraph 21 and 29 indicate that foreign exchange rate risk can be designated as the hedged risk in fair value and cash flow hedges. Additional provisions of paragraphs 21 and 29, not relevant to the situation treated in this article, relate to portfolios, hedges of portions of assets/liabilities, held-to-maturity securities, and additional allowable hedged risks.

Paragraph 40 has additional qualifying criteria for foreign currency fair value and cash flow hedges. The only criterion relevant to this article is that the hedged transaction has to be “denominated in a currency other than the hedging unit’s functional currency” (§40(b)). Other criteria in paragraph 40 relate to consolidated statements, hedging portfolios, intercompany transactions, and hedging of items with multiple risk exposures.

This appendix has summarized the criteria that must be met to qualify for hedge accounting for the hedging situation discussed in the article. The reader should be aware that there are additional requirements for other hedging situations that are beyond the scope of this basic summary. These requirements relate to hedges of portfolios, hedges using written options, and FX hedging using intercompany derivatives and treasury centers.