

KEY INSIGHTS:

- Companies may find want (or need) to modify their hedges prior to their swap's stated end-date.
- Replacing one swap for another means ending one designated hedging relationship and starting another. It's likely that some measure of ineffective earnings will be reported in earnings.
- The good news is that ineffective earnings impact may go away with an expected revision to hedge accounting rules.

Stuff Happens

Hedging with Off-Market Swaps

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Companies that have LIBOR-based bank debt can use swaps to lock in a fixed rate, thereby synthetically converting their floating-rate debt to fixed-rate debt. However, to have financial statements reflect this intended outcome, companies would need to qualify for—and apply—*special hedge accounting*.

For perfect hedges, where the accrual periods, reset dates and settlement dates on the swap are identical to those of the bank debt, and where the notional amount of the swap is at or below the outstanding principal on the loan, hedge accounting results in reported earnings that are identical to those shown with traditional fixed-rate funding. On the other hand, without hedge accounting, all unrealized gains or losses of the swap

are accelerated through current income, thereby fostering a reported interest expense on the income statement that would look anything but stable.

For most entities seeking to transform their variable rate debt in this way, it's pretty easy to arrange the perfect swap simply by setting the terms of the swap in the manner described above. Sometimes, though, stuff happens, and companies may find that they want (or need) to modify their hedges prior to their swap's stated end date. Often these adjustments come in response to changes in the planning horizon that might be motivated by any number of considerations. For whatever reason, the original swap may no longer be consistent with the hedger's preferences and a modification would seem to be appropriate.

It's not uncommon for companies in this situation to find themselves trying to replace a swap that is in a liability position. In this situation, liquidation of the swap would require paying an amount equal to the swap's liability value. Assuming the company did not have the cash (or liquid assets) on hand, it could either borrow the required funds or, perhaps more typically, enter into an off-market swap with the new counterparty.

Unfortunately, the way the hedge accounting rules work, replacing one swap for another means ending one designated hedging relationship and starting another. And with this re-designation, it's likely that some measure of ineffective earnings will be reported in earnings. Specifically, FASB requires measuring hedge ineffectiveness for a swap by comparing its results to that of a *hypothetical derivative*—a swap that perfectly offsets the risk being hedged, but with one critical caveat: The hypothetical swap must have a present value equal to zero when the hedge is designated. Thus, any off-market replacement swap wouldn't be able to be considered to be perfectly effective from an accounting perspective—even if the new swap and the original swap have identical terms.

A hedge-relationship example

One might be tempted to think that, whatever this ineffectiveness might be, it couldn't have a material effect. But you might be surprised. Consider the following example: We assume the hedge relationship starts on 6/30, with an actual derivative that has notional of \$10 million and a liability value of \$397,661. The swap has quarterly settlements, with two years remaining, as reflected in Table 1. Variable cash flows derive from resetting three-month LIBOR, quarterly, and the fixed rate on the swap is 2.1106 percent. The differences in the values of the fixed cashflows simply reflect different numbers of days in the various quarters.

Over the life of this swap, the projected reported earnings may be calculated by adding (a) the change in the swap's present value over the holding period (from a liability value of \$397,661 at the start to a zero value at the end) to (b) the sum of the settlements.

Mathematically,

Earnings = the change in the swap's present value + settlements

or

Earnings = (\$0 - (-\$396,661)) + (-\$400,290) = -\$2,629

Table 1: Cashflows for the Actual Derivative

Pay Date	Payments(Rcv)	Payments(Pay)	Net Payments	Discount	PV
09/30/2016	16,128	(53,937)	(37,809)	0.9991	(37,774)
12/30/2016	16,320	(53,351)	(37,031)	0.9982	(36,964)
03/31/2017	17,084	(53,351)	(36,267)	0.9972	(36,166)
06/30/2017	17,572	(53,351)	(35,779)	0.9962	(35,643)
09/29/2017	18,401	(53,351)	(34,950)	0.9952	(34,781)
12/29/2017	19,381	(53,351)	(33,970)	0.9941	(33,770)
03/29/2018	20,325	(52,765)	(32,440)	0.9929	(32,210)
06/29/2018	20,408	(53,937)	(33,529)	0.9917	(33,249)
09/28/2018	22,296	(53,351)	(31,055)	0.9903	(30,753)
12/31/2018	24,085	(55,110)	(31,025)	0.9888	(30,677)
03/29/2019	23,416	(51,592)	(28,176)	0.9873	(27,819)
06/28/2019	25,094	(53,351)	(28,257)	0.9857	(27,854)
Totals	240,511	(640,800)	(400,290)		(397,661)

Table 2: Cashflows for the Hypothetical Derivative

Pay Date	Payments(Rcv)	Payments(Pay)	Net Payments	Discount	PV
09/30/2016	16,128	(20,232)	(4,104)	0.9991	(4,100)
12/30/2016	16,320	(20,012)	(3,692)	0.9982	(3,685)
03/31/2017	17,084	(20,012)	(2,928)	0.9972	(2,920)
06/30/2017	17,572	(20,012)	(2,439)	0.9962	(2,430)
09/29/2017	18,401	(20,012)	(1,611)	0.9952	(1,603)
12/29/2017	19,381	(20,012)	(631)	0.9941	(627)
03/29/2018	20,325	(19,792)	533	0.9929	530
06/29/2018	20,408	(20,232)	177	0.9917	175
09/28/2018	22,296	(20,012)	2,284	0.9903	2,262
12/31/2018	24,085	(20,671)	3,414	0.9888	3,375
03/29/2019	23,416	(19,352)	4,064	0.9873	4,013
06/28/2019	25,094	(20,012)	5,082	0.9857	5,010
Totals	240,511	(240,360)	150		0

Table 2 shows an analogous presentation, but this time for the hypothetical derivative (i.e., the derivative covering the same accrual periods and notional value, but having a fixed rate that forces the present value of the swap to a value of zero when the hedge is newly designated.)

In this case, using the same math, the projected earnings for the hypothetical derivative over its life would be \$150. That is,

$$\text{Earnings} = (\$0 - \$0) + \$150 = \$150$$

Thus, we see a difference between the actual derivative's earnings and those of the hypothetical derivative—a difference of \$2,779 (= \$150 - \$2,629). Importantly, this difference would apply for any set of LIBORs that might develop, as in *all* cases, the payments received will be identical for the actual and the hypothetical derivative—irrespective of the values of LIBOR that may happen to arise. That is, the second columns

of the two tables will always be identical, under any progression of LIBORs.

Violate traditional boundaries?

The disparity between the two results is problematic in that it would seem to violate the traditional boundaries of a dollar offset ratio test. In other words, $-\$2,629 \div 150 = -17.5$. That's well outside the boundary conditions required to qualify as an effective hedge (i.e., 80 percent to 125 percent). But this out-of-bounds result is more of a reflection of the limitations of a dollar offset calculation being used as a means of effectiveness testing than anything else. A better test would compare this disparity to the notional value of the swap—\$10 million—and appreciate that the difference represents less than 0.03 percent if the notional, or an amount that would account about 1.4 basis points a year for each of the remaining two years.

At the heart of the issue is the fact the actual and hypothetical swaps have different interest rate sensitivities, and the difference will give rise to different quarterly price changes.

While this minor disparity in the effective fixed rate, *ex post*, relative to its *ex ante* anticipated fixed rate would likely justify the assessment that the hedge will perform quite satisfactorily over the entire hedge horizon, this conclusion won't necessarily hold in the short run. Under current accounting rules, swapping from fixed to floating with an off-market swap could end up introducing unintended and undesirable earnings volatility quarter by quarter—an outcome that is particularly discomfiting since the hedger would be trying to avoid income volatility by entering into the swap in the first place. At the heart of the issue is the fact the actual and hypothetical swaps have different interest rate sensitivities, and the difference will give rise to different quarterly price changes.

A common metric used to quantify interest rate sensitivities is the *dollar value of a basis point* (DV01), which estimates a swap's price change arising from a 1 basis point shift in interest rates. And when the DV01s are different for the actual and hypothetical derivative, ineffective earnings may result. Critically, the amount of this ineffective result can't be known in advance, as it would be directly related to the magnitude of the rate change.

A further consideration is that differences in DV01s don't *necessarily* mean ineffective earnings will result, as ineffective earnings occur only when the gain or loss of the actual derivative exceeds that of the hypothetical. Thus, if it happens the hypothetical derivative's DV01 is larger than the actual derivative's DV01, the difference would not be expected to impact reported earnings. On the other hand, if the actual derivative's DV01 is the larger, ineffective earnings would be expected. And, again, the bigger the rate change, the bigger the prospective ineffective earnings. As time passes, though, both DV01s will tend to fall as will the difference between the two. Thus, as the swap's maturity gets closer, the potential ineffective earnings impacts would likely decline, quarter by quarter.

Even better news is that this ineffective earnings impact may be eliminated with an expected revision to hedge accounting rules.

Even better news is that this ineffective earnings impact may be eliminated with an expected revision to hedge accounting rules. FASB has released an exposure draft, suggesting an important change to cash flow hedge accounting treatment, whereby entities would no longer be required to post ineffective hedge results to current earnings. It's not clear exactly when this rule may go into effect, but it's something to look forward to.

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