Some things deserve a second look.

Consider the company that buys inventory that it later sells, and suppose that inventory is carried on the balance sheet at lower-of-cost-or-market (LOCOM). In this case, the income statement could be affected at two distinct junctures: If the market price of the inventory drops below historical cost prior to the ultimate sale, that price effect would be reported in earnings; and when the goods are finally sold, a further income effect would also be realized associated with any subsequent price change.

Critically, once the inventory has been purchased, the overall profit or loss upon the ultimate sale is purely a
function of the sale price, which means that the earnings volatility that derives from changing inventory values is essentially transitory. Nonetheless, companies may consider hedging these inventory price exposures to mitigate the potential for income volatility.

Assuming the availability of derivative instruments relating to the goods under consideration, most hedgers (or potential hedgers) realize that a number of hedging vehicles could be considered:

• We could sell a futures contract or a forward contract
• We could buy a put option (conveying the right to sell the asset at a prescribed strike price or exercise price), or
• We could enter into a collar (or construct one by buying a put and selling a call).

The outcomes of these respective hedges would be different, of course, as each serves to achieve a different hedge objective. Futures or forwards lock in prices; put options offer downside price protection; and collars constrain the effective price or value to be within a best-case/worst-case range. Analogous choices also apply to hedging final sales.

And so the question arises: Should we hedge one or the other or both?

**Size matters**

If we were to focus on the problem of hedging inventory price risk, we’d have to start with a determination of the size of the exposure we’d want to hedge. At the start of any period, there’s a starting inventory volume. We add to that volume with inventory purchases during the period, and we reduce that volume with sales during the period, thus leaving us with an ending volume. The earnings impact that is realized, however, will depend on whether that ending inventory balance comprises inventory from the start (reflecting the starting inventory value) or inventory acquired during the period, and if the latter, at what price.

A perfect hedge construction would require a dynamic resizing of the derivative position to have it match the size of the inventory position each and every time the size of the inventory adjusts. In most cases, however, implementing that perfect hedge would simply be impractical. More likely than not, we would size our hedge to reflect, at most, the average size of the inventory during the period. (There’s no problem hedging less than this amount, but a hedge of more than this amount would amount to a speculative position for the excess.)

Given the potential for a variance of acquisition prices, however, this hedge will necessarily provide approximate coverage, and that should be understood at the outset. In
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any case, this decision should not be considered all or none. This type of exposure lends itself well to a partial hedge—particularly if one begins by determining the degree of coverage with a lack of precision (e.g., a decision to hedge, say, 40 percent to 50 percent of the expected exposure).

Logistically, inventory hedges can be constructed period-by-period, putting a hedge in place at the start of each period, and scheduling the derivatives’ expirations to coincide with period ends. This process would be repeated, period by period. Alternatively, we could use longer-dated derivatives intending to hedge this risk over multiple periods. If we chose this second approach, we’d likely have to expect our average inventory size to be reasonably stable. Either approach—period by period or longer-term—would work, but neither is perfect.

Hedging future sales

Turning to the idea of hedging future sales, we have to start with a projection of when these sales are likely to occur. Unless our hedge horizon is particularly extended, more likely than not, we’d structure our derivative positions to expire at or around the time of the expected sale. Conceptually, we have the same choices for hedging instruments and objectives as those of the inventory hedger (i.e., forwards or futures, options or collar), but in this instance, our contracts could be constructed to address multiple sales events over time, as opposed a single projected sale. With a multi-period horizon, we might think of a strip of futures contracts or possibly a commodity swap; we could think of buying an over-the-counter floor for multiple periods; or we could construct a multi-period collar by buying a floor and selling a cap. Sizing this hedge is easy. We simply buy derivatives that cover the volume of sales we choose to hedge. That's all there is to it—unless we've also hedged the inventory.

Hedging both the inventory and the prospective sale would effectively be hedging twice. Consider the special case where we buy 100 units of inventory on January 2 at a price of $1,000 per unit and expect to sell our goods in the second quarter by June 30. At the purchase, the inventory value is $100,000. At the quarter end (March 31), assume the unit price of the inventory has fallen to $600, such that the carrying value of the inventory is written down to $60,000, fostering a $40,000 current loss. Suppose we hedged the inventory by selling 100 units forward with a March 31 value date, and we also hedged the prospective sale by selling another 100 units forward with a June 30 value date. For simplicity, we assume perfect hedge results, such that each of our hedges generates $40,000 gain as of March 31. It should be clear that if no further price variability arises after March 31, the combined hedge ends up delivering double of what it should have if we really wanted to hedge income volatility.

To avoid this pitfall, those who hedge both inventories and final sales should realize that they should start with the sales and determine how much of the sales they want to hedge. Then, any amount of inventory that they choose to hedge should precipitate a one-for-one hedge reduction of the sales hedge in favor of the inventory hedge. In terms of the example posed above, if we decide to hedge the full exposure of 100 units, our hedge should likely be an inventory hedge through March 31, and thereafter it should be a hedge of the projected sale.

Now for the accounting considerations: By itself, the accounting for inventories is asymmetric. That is, LOCOM inventory accounting requires losses to be recognized when prices fall below historical costs, but gains don't get recorded when prices move higher. With no special accounting treatment, if this exposure were paired with a derivative and prices were to rise above historical costs, the derivatives' losses would be reflected in earnings with no compensating offset from the appreciated inventory. Applying fair value hedging would impose the desired symmetry, as, with that same fact pattern, the fair value hedge accounting requires adjusting the carrying value of the inventory upward, thereby providing for offsetting earnings impacts under both rising and falling price regimes.

We desire comparable symmetry for hedges of the forecasted sales. In this instance, however, cash flow hedge accounting is the appropriate choice. Under cash flow hedge accounting, effective hedge results are initially recorded in Other Comprehensive
Income (OCI) and later reclassified to earnings, coincidently with the sales recognition.

Critically, qualifying for these desired accounting treatments, may not be trivial—particularly for the inventory hedge. FASB rules require thinking about the inventory as a portfolio of goods, with very explicit constraints on the composition this portfolio if it is to be eligible as a hedged item in a fair value hedge. Moreover, the rules also require specific identification of the hedged item, such that any substitution in the inventory (i.e., replacement of old inventory with new inventory) would require a coincident process of hedge re-designation if fair value hedge accounting were desired throughout the process. Unfortunately, large segments of hedgers seeking to hedge this inventory price risk may often find that their intention to apply this treatment is precluded because one or the other of these considerations simply rules it out.

Cash flow hedges also have their challenge. Like fair value hedges, the hedged item needs to be well-specified and documented. Hedgers must associate their hedging derivatives with particular sales. This identification is generally achieved by associating the first hedging derivative for any collection of sales with first X units sold in the designated time frame; the second derivative with the next Y units, etc. In this case, however, the vast majority of hedging entities can accommodate to these rules and apply cash flow hedge accounting, generally with little difficulty.

If the objective is to minimize income volatility, the conceptual approach of jointly hedging inventory exposures and prospective likely offers the highest probability of success, but only if the appropriate accounting treatment can be applied. Unfortunately, many companies may feel closed out of this approach due to the constraints imposed by the fair value hedge accounting rules. The good news is that a work-around may be available for these companies.

When fair value hedge accounting is impermissible, a possible alternative is simply to enter into an asymmetric derivative—i.e., a put option—without resorting to hedge accounting. With falling prices, the payoff of the put would offset the decline in the value of inventory, consistent with our objective. When prices rise, on the other hand, it may not be perfect, but it could be close. While no earnings impact will arise from the appreciated inventory, the put would likely generate a relatively small cost as a consequence of the put’s time decay. Over the life of the hedge, the loss on the put would be limited to the price paid for the put, which inevitably will represent a small portion of the value of the inventory being hedged.

Under this strategy, the hedger would necessarily determine some acceptable level for the cost for that the company would be willing to bear to achieve its objective of minimizing income volatility, and the price paid for the put(s) would be constrained to a price at or below this budgetary consideration. As special hedge accounting would not be sought, the need for hedge documentation or efforts relating to effectiveness testing and measuring hedge ineffectiveness would be obviated. Instead, we simply apply standard derivatives accounting, marking these puts to market, with the changes recorded in earnings.

Not a bad solution, after all.

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