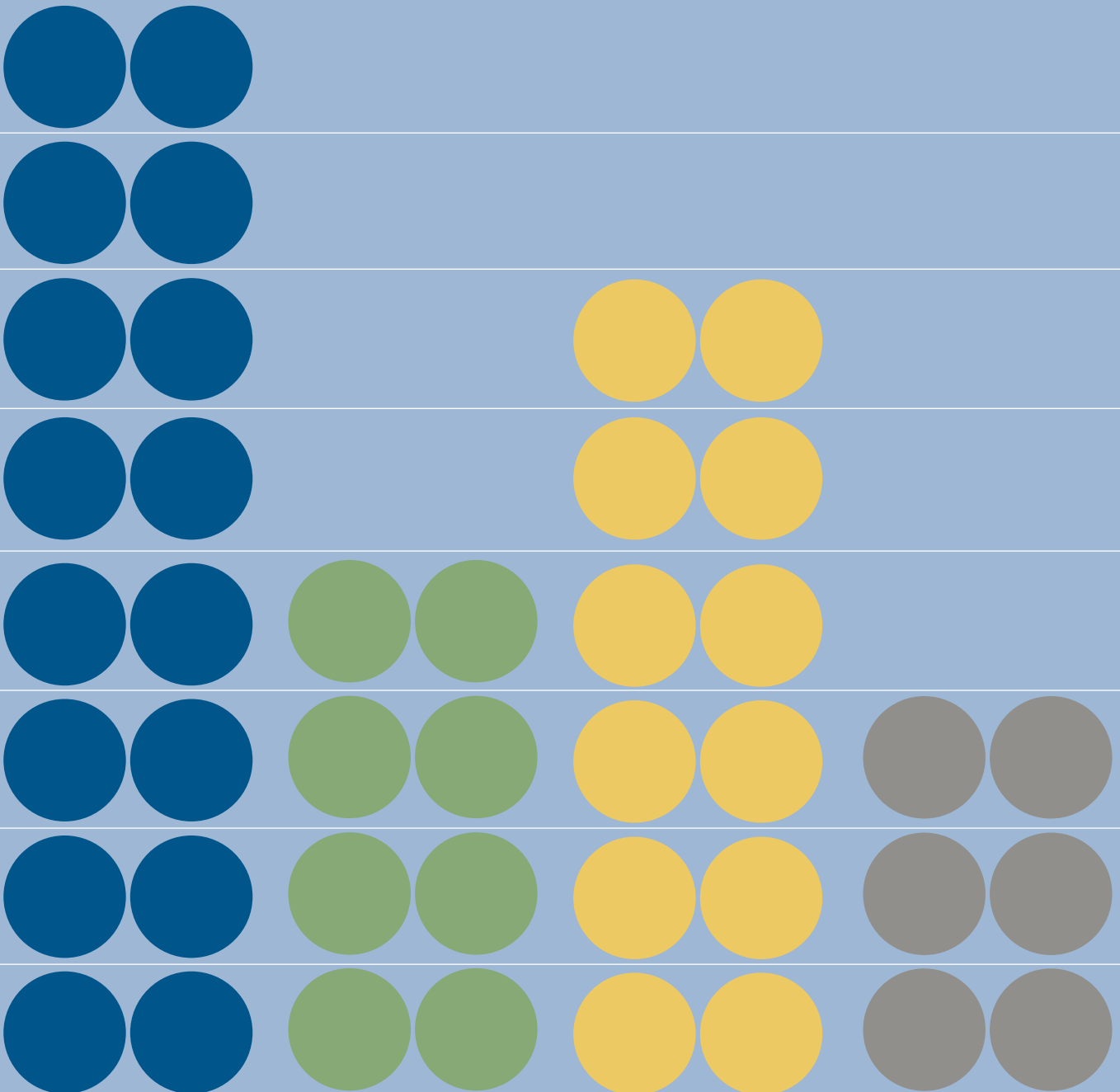


# Multiple Futures

Managing risk and managing income

*Ira G. Kawaller*



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### Is it unethical to manage income?

Income management certainly sounds fishy, but in certain cases dealing with hedging and risk management, it’s virtually unavoidable. Because similar derivatives often have different accounting treatments, the hedger can “elect” when to report earnings—at least to some extent—by choosing one tool over another.

Consider the case of the company facing uncertain cash flows in future accounting periods. These exposures might be associated with prospective purchases or sales of some good or commodity, or they could arise from some variable interest expense or revenue source. (In accounting parlance, we’re talking about cash flow hedges.) In any case, if the hedger wants to lock in future prices or interest rates, he or she can do so

**Table 1: Oil Prices**

	\$/bbl	Differential (Futures price – spot price)	Differential ÷ No. of expirations
Spot price	86	NA	NA
1st futures	90	4	4
2nd futures	94	8	4
3rd futures	98	12	4
4th futures	102	16	4
5th futures	106	20	4
6th futures	110	24	4
<b>Average</b>	<b>100</b>		

Source: Ira Kawaller.

using either swap contracts or strips of futures contracts. Interest rate and commodity swap lock in the same price or interest rate for all of the periods covered by the swap. Futures, on the other hand, lock in prices period-by-period e.g., month-by-month or quarter-by-quarter, thereby locking in an overall price (or interest rate) for the period covered.

As an example, suppose crude oil was trading in the spot market at a price of \$86 per barrel, and suppose you could trade the series of successive futures contracts at prices shown in Table 1. This strip of futures contracts allows the hedger to lock up individual prices for each of the next six months’ of purchases or sales. Overall, however, this configuration of futures prices allows the hedger to achieve an effective price of \$100 per barrel over the six month term. Given this set of

prices, a swap dealer would likely be quoting a fixed price of \$100 for the swap covering the same time frame—perhaps not exactly \$100, but it should be close.

This comparability arises because futures markets generally serve as the foundation for swap market pricing. If there’s a viable swap contract, in all likelihood, an associated futures market served as its precursor. For interest rate swaps, the analogue is the market for Eurodollar futures or LIBOR futures. The names may be a little confusing, but it’s just the nomenclature of the marketplace. Eurodollar futures are futures contracts that lock in forthcoming three-month LIBORs, while the LIBOR futures lock in forthcoming one-month LIBORs. Analogously, for gas swaps, there are gas futures; for oil swaps, there are oil futures, etc.

## Understanding futures contracts

Futures contracts clearly have some institutional aspects that have to be understood—like the requirement to post collateral (initial margin) and the need to settle gains or losses daily, in cash (variation margin). Economically, however, futures are just standardized forward contracts that are traded on an exchange. At least historically, swaps have allowed for more customization, where dealers accommodate to the needs of their customers and set the terms of their swaps accordingly. Futures, on the other hand, being standardized contracts, tend to be less-than-perfect fits for specific exposures that firms face.

Here's where the income management comes in.

It's up to you whether you prefer recognizing an equal amount each month (or each quarter) as a consequence of hedging with a swap, or if you'd prefer locking that (or nearly the) same price over time but having earnings amounts that vary month by month, through the term of the hedge. This later result would follow from using futures contracts.

In assessing a futures hedge, the starting point should be an appreciation that deviations between the respective futures prices and their underlying spot price—commonly called forward points—implicitly represent either a cost or a benefit to the hedger. This depends on whether the entity is buying or selling the futures contract and whether futures price is higher or lower than the spot price. On Table 1, all of the successive futures prices are higher than the starting spot price, and the forward-

point amounts increase as the forward-value dates extend out into the future. These forward points thus translate to gains for the short hedger, i.e., the hedger of prospective sales, and losses for the long hedger, i.e., the hedger of prospective purchases. In contrast, if the futures prices had been lower than the starting spot price, forward points would have represented a loss for the short hedger and a gain for the long hedger. The sum of all the differences for all of the contracts in a strip translates directly to an overall dollar amount—beneficial for one type of hedger, detrimental for the other.

### Cost or benefit?

Even within the dictates of hedge accounting, exactly how and when the costs or benefits from forward-point adjustments hit the income statement depends on a further election by the hedging entity. Specifically, to qualify for hedge accounting, prospective and retrospective effectiveness assessments are required. The accounting rules allow for some discretion in terms of exactly how these tests are constructed and/or what the passing criteria are, but one specific allowance that the guidance offers is the capacity to exclude forward points from the effectiveness assessment.

A corollary of that allowance, however, is that if the election to exclude forward points from an assessment of effectiveness is made, those forward-point effects would have to be recognized in earnings, period-by-period, in a manner that reflects the market adjustments of these forward points, as they arise. In contrast, without electing to exclude forward points from the hedge

effectiveness assessments, the full gain or loss of the derivative (inclusive of the forward point effects) would be deferred through OCI, to the extent that these value changes were deemed to be effective.

Returning to the election to exclude forward points, although we can't know for sure at the outset of any hedge exactly how the forward points are going to adjust throughout the hedge horizon, we can at least explore the consequence of a base case—the case where the forward-point adjustment is assumed to be linear for each contract throughout the hedge. Referring again to Table 1, and assuming the first futures contract expires one month from now, the second expires two months from now, etc., it should be clear that each contract might reasonably be expected to foster a gain (or loss) of \$4 each month as that contract approaches maturity, as a consequence of the forward-point values ratcheting down toward their ultimate value of zero at the contracts' expirations.

In the first month of the hedge, all six contracts would be open positions such that we could reasonably expect a combined forward point effect of  $6 \times \$4 = \$24$  to hit earnings. After the first expiration, though, only five contracts would remain in the hedge, and then four contracts, and then three, etc., as month by month, an open contract comes to its final close-out date. The effect of the declining number of contracts over the hedge horizon is to "front-load" the forward point effect. That is, in the first month of  $6 \times \$4 = \$24$  (per barrel) would be recognized in earnings due to forward-point adjustments,  $5 \times \$4 = \$20$  in the second month,  $4 \times \$4 = \$16$  in the third month, etc.

## Futures may have a considerable advantage over swaps because of their liquidity.

The election not to exclude forward points works in the reverse. That is, the forward-point effects for each contract gets recognized in earnings through a reclassification process, period by period—\$4 in connection with the first contract's reclassification, \$8 for with the second contract's reclassification, \$12 for the third contract's reclassification, etc. This process thus fosters a back-loaded earnings impact effect, i.e., forward-point earnings impacts that start small and increase over time.

### Consider futures

The moral of this story is that if reducing income volatility is the primary hedge objective, the swap would likely be the preferred derivative instruments, but don't reject to use of futures too precipitously. Futures may have a considerable advantage over swaps because of their liquidity. While most swap users tend to maintain their positions through their swaps' termination dates, that's generally not the case for futures users. Those who

hedge or trade with futures contracts tend to assess their positions on an ongoing basis, and it's not unusual for positions to be adjusted—up or down—with changing market conditions or new information. It's not that you can't necessarily liquidate swap contracts early, but doing so likely involves a special pricing negotiation with your original dealer in a way that's less than fully transparent where the benefit of competition may be sharply compromised.

*A frequent contributor to AFP Exchange, Ira Kawaller is the founder of Kawaller & Co., a consulting company that specializes in assisting commercial entities in their use of derivatives. He can be contacted at Kawaller@kawaller.com.*



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