

• Brokerage fee

If the producer decides to hedge, the fee charged by the broker to handle futures trading will have to be paid. This fee ranges from \$50 to \$100 per contract (varies by brokerage firm and number of contracts traded, which puts the cost of trading at 15 to 20 cents per cwt.).

• Interest on margin

A deposit is required for every contract traded. The size of the initial margin deposit will vary by type of livestock futures contract and the price level. Normally the initial margin deposit will range from 5 to 10 percent of the value of the contract. Also, if the futures market price moves in a direction that is adverse to the futures position, the hedger will have to deposit additional funds.

Since the margin deposit has to be paid as the market requires (as the loss accrues) an interest charge should be assessed as a part of the cost of hedging as shown in Example 3. The size of the interest charge will depend on the direction of futures price and how long the contract is held. The best one can do is to make a rough estimate of the interest charge.

Example 1. Localizing using basis.

June futures	\$65	per cwt.
Expected basis	- 2	per cwt.
Localized futures price	\$63	per cwt.

Example 2. Potential hedge returns.

Localized futures price	\$63.00
Brokerage fee	-.20
Interest on margin	-.17
Cost of production	-59.00
Est. return	\$3.63

In this example, it is estimated the hedge return will be \$3.63 per cwt. or \$39.93 for an 1,100 lb. steer. Unless the outlook forecast gives a high probability of prices rising above this level, hedging should seriously be considered.

• Cost of production

A third factor in analyzing whether or not to hedge is to compare the adjusted futures price with the cost of production and price objectives to determine the estimated net return from the hedge. The level of desired profit and price risk one is willing to assume by not hedging varies by individual producer. So each producer must determine whether the estimated return from hedging is satisfactory.

Lifting the short hedge

Lifting a short hedge involves buying back (off-setting) your futures position and simultaneously selling your livestock on the cash market. A hedging example is shown in Example 4 on page 4. From the time the hedge is placed until it is lifted, the hedger can ignore both cash and futures markets because the gain (loss) in one market will offset the loss (gain) in the other market. For example, if the price declines after the hedge is placed, the decline in the cash market is offset by the gain in the futures market. If the price rises, the rise in the cash market is offset by the loss in the futures market. Implications of using basis to lift a hedge are discussed in **Understanding Livestock Basis, File B2-40.**

Example 3. Interest charge on margin.

Sold a 40,000 lb. live cattle contract for \$65/cwt.
 Contract held 4 months
 Interest rate is 12 percent
 Initial deposit \$1,000
 Additional deposit of \$200 made after one month
 Additional deposit of \$400 made after two months
 Additional deposit of \$200 made after three months

Initial margin			
\$1,000 x 12% x (4/12) year	=		\$40
Additional margin			
\$200 x 12% x (3/12) year	=		6
Additional margin			
\$400 x 12% x (2/12) year	=		8
Additional margin			
\$200 x 12% x (1/12) year	=		<u>2</u>
Total interest			\$56

Interest per cwt. = 14¢ (\$56/400 cwt.)

How to lift the hedge

Live cattle futures short hedges can be lifted two ways:

1. Buying a futures contract (same contract month that was sold earlier) and simultaneously selling the cattle in the normal way on the cash market
2. Delivering the cattle on the contract as the contract specifies.

When lifting a short livestock hedge, the producer should remove the futures position just prior to selling the livestock on the cash market. The sequence of events would be as follows:

1. Obtain cash price bid for livestock.
2. Obtain futures price for appropriate month.
3. Examine basis and compare with historical basis data.

If the decision is to lift the hedge,

4. Buy futures contract for appropriate month.
5. Sell livestock on cash market.

The greater the time between the cash sale and offsetting the hedge, the greater the basis risk.

Hold into contract month

Contrary to advice given to grain hedgers who are advised never to hold into the delivery period, livestock producers can hold hedge positions into the delivery period. The livestock basis is more stable during the delivery period; hence, it is more predictable than during non-delivery periods. With cash settlement contracts (lean hogs and feeder cattle) it is not necessary to lift the hedge. The hedge will be closed out at the settlement price.

A cattle hedger holding into the delivery period should monitor *open interest*, or the number of contracts still open. If the open interest drops much below 1,000 contracts, the hedge should be lifted regardless of the basis.

Hedging in non-contract months

Futures contracts are not available for every month of the year. Therefore, the livestock producer may have livestock going to market in months when there is no futures contract. Hedging in non-contract months is more risky than in contract months. The basis in the non-contract months is less stable than in the contract months.

Hedging and quality

Producers selling livestock that are not of the grade specified in the futures contract face additional basis risk. Discounts for select grade cattle and carcass premiums and discounts should be factored into the basis.

Example 4. Hedge example.																																									
<p>Jones has 250 hogs that will be marketed in June. Jones has decided to hedge one hog contract on the Chicago Mercantile Exchange (40,000 carcass pounds contract or approximately 220 hogs). First, calculate expected profit.</p>	<p>Assume (carcass weight costs and prices):</p> <table border="0"> <tr> <td>June futures</td> <td></td> <td>\$75.00</td> </tr> <tr> <td>Expected June basis</td> <td></td> <td>- 3.00</td> </tr> <tr> <td>Localized futures price</td> <td></td> <td>\$72.00</td> </tr> <tr> <td>Brokerage fee</td> <td>\$.15</td> <td></td> </tr> <tr> <td>Interest on margin</td> <td>.10</td> <td></td> </tr> <tr> <td>Cost of feeding</td> <td><u>65.00</u></td> <td></td> </tr> <tr> <td>Total</td> <td>\$65.25</td> <td><u>- 65.25</u></td> </tr> <tr> <td>Expected hedge profit</td> <td></td> <td>\$6.75 per cwt.</td> </tr> </table>		June futures		\$75.00	Expected June basis		- 3.00	Localized futures price		\$72.00	Brokerage fee	\$.15		Interest on margin	.10		Cost of feeding	<u>65.00</u>		Total	\$65.25	<u>- 65.25</u>	Expected hedge profit		\$6.75 per cwt.															
June futures		\$75.00																																							
Expected June basis		- 3.00																																							
Localized futures price		\$72.00																																							
Brokerage fee	\$.15																																								
Interest on margin	.10																																								
Cost of feeding	<u>65.00</u>																																								
Total	\$65.25	<u>- 65.25</u>																																							
Expected hedge profit		\$6.75 per cwt.																																							
<p>In situation #1 the actual hedge return is the same as the expected return because (1) the actual basis and the expected basis are the same, (2) the brokerage fee was estimated correctly, (3) interest on margin remained the same as estimated, and (4) the cost of production was accurately estimated.</p>	<p>Situation #1: Prices fall after placing hedge</p> <table border="0"> <thead> <tr> <th></th> <th style="text-align: center;">Futures</th> <th style="text-align: center;">Cash</th> </tr> </thead> <tbody> <tr> <td>In February,</td> <td></td> <td></td> </tr> <tr> <td> sell June contract</td> <td style="text-align: right;">\$75.00</td> <td></td> </tr> <tr> <td>In June,</td> <td></td> <td></td> </tr> <tr> <td> buy June contract</td> <td style="text-align: right;">70.00</td> <td>Sell cash \$67.00</td> </tr> <tr> <td>Futures profit</td> <td style="text-align: right;">\$ 5.00</td> <td></td> </tr> <tr> <td>Cash price</td> <td></td> <td style="text-align: right;">\$67.00</td> </tr> <tr> <td>Futures profit</td> <td></td> <td style="text-align: right;">+ 5.00</td> </tr> <tr> <td>Final hedge price</td> <td></td> <td style="text-align: right;">\$72.00</td> </tr> <tr> <td>Cost of feeding</td> <td></td> <td style="text-align: right;">-65.00</td> </tr> <tr> <td>Brokerage fee</td> <td></td> <td style="text-align: right;">-.15</td> </tr> <tr> <td>Interest on margin</td> <td></td> <td style="text-align: right;"><u>-.10</u></td> </tr> <tr> <td>Actual hedge return</td> <td></td> <td style="text-align: right;">\$6.75 per cwt</td> </tr> </tbody> </table>			Futures	Cash	In February,			sell June contract	\$75.00		In June,			buy June contract	70.00	Sell cash \$67.00	Futures profit	\$ 5.00		Cash price		\$67.00	Futures profit		+ 5.00	Final hedge price		\$72.00	Cost of feeding		-65.00	Brokerage fee		-.15	Interest on margin		<u>-.10</u>	Actual hedge return		\$6.75 per cwt
	Futures	Cash																																							
In February,																																									
sell June contract	\$75.00																																								
In June,																																									
buy June contract	70.00	Sell cash \$67.00																																							
Futures profit	\$ 5.00																																								
Cash price		\$67.00																																							
Futures profit		+ 5.00																																							
Final hedge price		\$72.00																																							
Cost of feeding		-65.00																																							
Brokerage fee		-.15																																							
Interest on margin		<u>-.10</u>																																							
Actual hedge return		\$6.75 per cwt																																							
<p>The hedger would receive a profit of \$6.75 per cwt. for 220 hogs and only \$2.00 per cwt. for the 30 unhedged hogs (\$67.00 cash price - 65.00 cost of feeding = \$2.00) .</p>																																									
<p>In situation #2, the actual hedge return is \$1.10 per cwt. less than the estimated return (\$6.75 - 5.65 = \$1.10) because the actual basis (\$76 - 80 = \$-4) is one dollar more negative than the expected basis, and because of the added interest on margin that was the result of additional funds having to be deposited during the price rise.</p>	<p>Situation #2: Prices rise after placing hedge</p> <table border="0"> <thead> <tr> <th></th> <th style="text-align: center;">Futures</th> <th style="text-align: center;">Cash</th> </tr> </thead> <tbody> <tr> <td>In February,</td> <td></td> <td></td> </tr> <tr> <td> sell June contract</td> <td style="text-align: right;">\$75.00</td> <td></td> </tr> <tr> <td>In June,</td> <td></td> <td></td> </tr> <tr> <td> buy June contract</td> <td style="text-align: right;">80.00</td> <td>Sell cash \$76.00</td> </tr> <tr> <td>Futures loss</td> <td style="text-align: right;">-\$5.00</td> <td></td> </tr> <tr> <td>Cash price</td> <td></td> <td style="text-align: right;">\$76.00</td> </tr> <tr> <td>Futures loss</td> <td></td> <td style="text-align: right;">-5.00</td> </tr> <tr> <td>Final hedge price</td> <td></td> <td style="text-align: right;">\$71.00</td> </tr> <tr> <td>Cost of feeding</td> <td></td> <td style="text-align: right;">-65.00</td> </tr> <tr> <td>Brokerage fee</td> <td></td> <td style="text-align: right;">-.15</td> </tr> <tr> <td>Interest on margin</td> <td></td> <td style="text-align: right;"><u>-.20</u></td> </tr> <tr> <td>Actual hedge return</td> <td></td> <td style="text-align: right;">\$5.65 per cwt</td> </tr> </tbody> </table>			Futures	Cash	In February,			sell June contract	\$75.00		In June,			buy June contract	80.00	Sell cash \$76.00	Futures loss	-\$5.00		Cash price		\$76.00	Futures loss		-5.00	Final hedge price		\$71.00	Cost of feeding		-65.00	Brokerage fee		-.15	Interest on margin		<u>-.20</u>	Actual hedge return		\$5.65 per cwt
	Futures	Cash																																							
In February,																																									
sell June contract	\$75.00																																								
In June,																																									
buy June contract	80.00	Sell cash \$76.00																																							
Futures loss	-\$5.00																																								
Cash price		\$76.00																																							
Futures loss		-5.00																																							
Final hedge price		\$71.00																																							
Cost of feeding		-65.00																																							
Brokerage fee		-.15																																							
Interest on margin		<u>-.20</u>																																							
Actual hedge return		\$5.65 per cwt																																							

*Basis information is available in files **B2-40**, **B2-41**, **B2-42**, and **B2-43**.