

# Risk Management for Retained Ownership

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Within the last year, this industry has gone through two tremendous breaks and reallocations of capital. After virtually a decade of progressively tighter supplies and increasing HRI demand, the industry has now found itself with six consecutive quarters of more beef than the previous year, along with the ever present growth of poultry and pork supplies. In 1994, beef production was up 4.6% over 1993, while pork was 2.6% greater, and total poultry was 2.6% higher. Early estimates for 1995 put total beef production up 2.8%, pork up 1.6%, and poultry up 5.6% over 1994 levels.

These items, along with the expansion of commercial feedyards, created opportunities for the cow-calf producer or stocker to easily sell his product to a very willing buyer that, at times, lost as much as \$40 per head just to "fill the yards." Now that willing buyer has lost his faith in the future and, due to increased feeder supplies, feels comfortable in waiting for customers to "fill the yards." To bring out these new customers, feedyards are aggressively offering financing, courting larger feeders and investors, and reemphasizing production and efficiencies. What this means is, at times, the pendulum has swung to the cow-calf producer or stocker to give him more incentive to retain the animal until it is a finished product. For the feeders, retainers given may be as much as \$25 per head to assume the risks of feeding (weather, death loss, feed costs, interest, etc). In fact, at times, the risks versus rewards have been great enough to actually bring back the investor.

So, how do we as retained owners manage the risk from birth to sale as the opportunities arise?

## **1) Know Your Costs of Production**

As always, you need to know your costs of production to determine the initial costs of the calf. Even though this session will not go into great depth on this operation, it is the most critical step of any manufacturing process. Production costs are the basics of cash flows which will eventually determine whether you stay in business or close. Once your costs of production are known, you must figure the breakevens as a feeder and as fat which will show you the opportunities in forward contracting (flat price or basis), or using futures.

## **2) Know Your Risk Position**

You need to always know your risk position. In other words, a cow-calf producer needs to know that his 300 calves born in the spring will be 300 feeders in the summer of the next year and will be fat cattle in the fall. As the calves are born (or, in some cases, one, two, or more calf crops in advance) you need to know what your potential is for the sale next fall, or what the August or September C.M.E. feeder price is, and what the price for fat cattle versus the October or December C.M.E. live cattle futures is. If, given reasonable production costs, there is the potential for \$30 profit per head and the market outlook is for steady-weaker prices, you should look hard at hedging to "lock-in" profits.

## **3) Minimizing Risk**

Assuming the long term outlook is steady-weaker, you need to know how you can capitalize and minimize risk. As a cow-calf producer or stocker you can forward contract with a private

party; however this leaves you with little flexibility and risk that the buyer may not honor the sale price or purchase. Using futures, you can easily change your risk positions as market outlooks change, and be guaranteed the price at the sale (plus or minus the expected basis differences) for a relatively minor deposit (called your initial margin deposit). However, before venturing into the use of futures, you need to have your banker (traditional or feedlots) understand the need to fund your margin calls. In other words, as the futures go up in value, you will have to make margin calls to make up the difference between your futures price and the close of the futures each day. When you sell your cattle in the cash market and lift your hedge, the increase in the value of your live cattle should equal your loss in the futures market, plus or minus basis. Subsequently, when the futures price goes down, the clearing firm will credit your account. And when you get a lower cash price and lift your hedge, the futures profits will make up the difference, plus or minus the basis.

## Examples

Let's look at a typical scenario for a stocker who places calves on grass in April, finishes them in August, and places them in a feedyard with a projected sale in December.

**Risk Position** The following sheet, labeled Table 1 Risk Management, has two examples. The first (A) is if the stocker's projected breakeven and market outlook makes you decide to hedge in the feeders. The second (B) is if the same ideas make you decide to hedge in the fats. (Note: By using the futures versus a forward sale, you can easily change your ideas between A and B and back as often as desired.)

**A)** In this example, the stocker has 670 head which translates to 10 contracts of feeders:  $(670 \text{ head}) \times (750 \text{ lb.}) = 502,500 \text{ lb.}$  divided by 50,000 lb, equals 10.5; say 10 contracts. His futures position is short 5 August C.M.E. feeder contracts, and long 5 August \$62 C.M.E. feeder

puts.

**B)** In the second example, the stocker has decided to pursue it as a feeder. He projects to have 670 head for sale as fats in December which is 19 contracts of live cattle:  $(670 \text{ head}) \times (1150 \text{ lb.}) \div (40,000 \text{ lb.}) = 19.26$ , say 19 contracts. His futures position is short 10 contracts of December C.M.E. live cattle futures; long 9 contracts of December \$66 C.M.E. live cattle puts; he owns 15,000 bushels of cash corn, and is long 10,000 bushels of December CBOT corn.

**Breakevens** The following sheet, labeled Table 2 Breakeven, shows selling as a feeder and/or a fat. Before you make the decision to keep your calves, purchase calves to run or graze as feeders, or decide to possibly retain through feeding, you need to work out your breakeven. Let's look at the breakeven example, based on pricing a 400 lb. steer calf at \$84 in September 1994 and using the futures prices on Sept. 1, 1994. As you can see, you picked up \$25.87 on your feeders with an outweigh of 816 lb. and an additional \$18.75 on the fat cattle at 1176 lb. In other words, pricing the 400 lb. calves at \$84 and retaining them through two grazing programs and feeding in Colorado, you could have sold the futures and reasonably locked in another \$44.62 per head and marketed the cattle in November 1995. Your risks would be the \$0.52 cost of gain (directly tied to corn and conversions), the weather during 1994–95 winter while they are grazing on wheat, interest costs, etc.

If you had hedged these cattle in the March feeder contract and then rolled the short to the October live cattle contract when the March feeder contract expired, you would have picked up approximately an additional \$15 per head because the feeders lost about \$1,000 in the premium to the live cattle contract when compared on an equal basis. Not surprisingly, your breakeven on Sept. 1, 1994 showed this discrepancy when compared to profits as a feeder versus fat; then the placements came and the premium was lost.

## **Implementation**

The easiest implementation to understand is simply the selling (going short) of futures. As an owner of feeders, you are already long, so the principle of hedging is to sell the futures to offset the price risk. There may be cases where you have contracted to purchase calves at a price over the feeder futures contract, and you have the opportunity to buy feeder future contracts to lock in the calf price and sell the live cattle futures to lock in a potential profit. When the seller of the calves prices them, you cover your futures (sell the futures) and keep the live cattle futures in place. This is the crush, without the corn.

Three of the more common option strategies are to (1) buy a put, (2) sell a call, and (3) buy a put and sell a call (commonly called a fence). The first question to ask when using options is, how much risk exposure do you want? Assuming the breakeven for live cattle is \$66 when fat, you can purchase a \$60 put and be at risk on \$6, but have all of the upside potential over \$66 plus the cost of the put. Secondly, you can sell a \$70 call and collect the premium, then you only have the protection of the premium with unlimited downside cash risk and a cap on the upside of \$70 plus the premium collected. Thirdly, you could purchase a put and sell a call. Assuming the cost of the premium to purchase the \$60 put and the revenue received from the sale of the \$70 call are equal, you have then put a fence around the \$66 breakeven of \$60 as a floor and a ceiling of \$70.

## **Market Analysis**

Whether you use the futures or options, a complete analysis of what is an expected high cash price and a low cash price for the marketing period needs to be realized. With these price levels, you then need to look at the present futures market prices, technical factors, and volatility in order to match the risk versus reward and determine the level of

hedging needed.

If the market has just experienced a hard break to, say, \$60; you placed cattle in the feedlot that will market in August; and the market analysis suggests an expected cash low of \$60 in August; then you may want to do little or no hedging at this level. If the market then rallies to \$66 on the August live cattle futures, and the expected cash high is \$65, you may want to get fully hedged. In the same example, the options can be used; however a third factor, volatility, needs to be analyzed.

The volatility is also graphed historically and expected highs and lows for a period need to be worked into the valuation. A good example was the 1994 June live cattle \$70 put. In February 1994, the volatility was trading at 8.06%, an historical low. The fundamental market analysis suggested a cash low of \$68 and a cash high of \$74 while the futures were trading at \$75. Obviously, hindsight reveals that it would have been better to sell the futures, since futures fell to \$65. But in February you could have purchased the put for as little as \$0.30 cwt. (\$120 per contract or \$3.50 per head), a relatively small premium to pay for "insurance" since a low of \$68 was expected based upon early market analysis.

## **Summary**

The retention process needs to begin with determining your costs, calculating projected breakevens at various stages of completion (as a feeder and/or fat), maintaining your risk positions for quick reference, and studying the markets (both fundamentally and technically) to determine the risks versus rewards. Obviously, this is easier said than done. But, as with most items, the process is relatively simple and the knowledge is readily available through commercial feedyards, experienced futures brokers who specialize in cattle, universities and extension agencies, publications and various material available through the exchanges.

**Table Risk Management.**

DATE: 04/01/95	A	
	Gator Company (use projecting of	Cattle (use projecting of
<i>LIVE</i>		
MARCH-APRIL		
MAY-JUNE		
SEPTEMBER-OCTOBER		
		670 (19
JANUARY-FEBRUARY		
MARCH-FORWARD		
		670 (19
<i>LC</i>		
APRIL		
JUNE		
OCTOBER		
		(10
FEBRUARY		
TOTAL		(10)
		+9 66
<i>FEEDERS</i>		
'95		
MAY		
JULY-AUGUST	head contracts)	
OCTOBER		
TOTAL	head contracts)	
<i>FUTURES</i>		
'95		
MAY	(5	
SEPTEMBER		
NOVEMBER		
FC		
<i>FDR</i>		
	+5 August puts	
<i>CORN</i>		15,000 \$2.80
<i>FUTURES</i>		December

**Table 2. Breakeven.**

CUSTOMER:	<u>Gator Cattle Company</u>	DATE:	<u>09/01/94</u>
LOT #	<u>1</u>	DATE LOT COMPLETED:	<u>09/01/94</u>
TYPE OF DEAL:	<u>Wheat/Osage-Flint</u>	NUMBER OF HEAD:	<u>200</u>
AVERAGE WEIGHT:	<u>400</u>	AVERAGE \$/CWT:	<u>84.00</u>
SEX:	<u>F+</u>	SOURCE:	<u>N/A</u>
<b>COST SUMMARY</b>			
	OUTSIDE HEAD TOTAL	FEEDLOT HEAD TOTAL	
CATTLE COST	336.00	555.13	
FEED <sup>a</sup>	30.00	187.13 <sup>e</sup>	
PASTURE <sup>b</sup>	114.88	—	
MEDICINE, PROCESS, OTHER <sup>c</sup>	15.00	—	
INTEREST ON CATTLE <sup>f</sup>	22.37	16.43	
INTEREST ON FEED/PASTURE <sup>f</sup>	5.32	2.77	
FREIGHT <sup>d</sup>	26.06	16.32	
DEATH LOSS (2% / 1%)	5.50	7.78	
TOTAL COST	555.13	785.63	
OUT DATE	07/15/95	11/15/95	
OUT WEIGHT	816	1176	
ESTIMATED BREAKEVEN	68.03	66.81	
FUTURES MONTH	08/95 Feeders	10/95 Fat	
FUTURES CLOSE	73.00	67.40	
EXPECTED BASIS	(1.80)	+1.00 to November	
EXPECTED SALES PRICE	71.20	68.40	
P/L PER HEAD	\$25.87	\$18.75	
<sup>a</sup> 09/01 to 10/15—Precondition cost \$30.00, and \$8.00 medicine and processing. <sup>b</sup> 10/15 to wheat—In Panhandle, \$0.30 cost of gain, 1.25 lb/day gain. <sup>c</sup> 04/01 to Osage-Flint Hills—\$0.25 cost of gain, 2 lb/day gain, \$7.00 head for tags, Ivomec and implants. <sup>d</sup> Freight—\$5.00 cwt. from Florida to Panhandle, \$1.00 cwt. freight from Panhandle to grass in Osage or Flint Hills. <sup>e</sup> Yard—\$0.52 cost of gain, 3 lb/day gain, freight \$2.00 cwt. from Osage to Colorado. <sup>f</sup> Interest at 9%.			