



Cow-Calf Risk Analysis

Managing Marketing Risk on a Ranch

Dillon M Feuz and Sarah A. Drollette
Applied Economics, Utah State University

Cattle ranchers deal with a significant amount of uncertainty every day. Weather and disease can have a big impact on production. Market uncertainty is also a major source of risk to agricultural producers. Fall calf prices in 2003 were about \$20 per cwt higher than they were in 2002. Producers were not complaining about the added \$100 per calf. However, in 2006 the price of calves from September to November declined \$15-20 per cwt. in most markets. That took dollars out of ranchers pockets at a time when fuel, hay and grain input prices were all rapidly increasing. Using the CME Feeder Cattle contract as a proxy for price expectations, price changes on the November contract have averaged \$7.50 per cwt from May until November from 1999-2008. In 2003 the change was more than \$17 per cwt to the positive and in 2008 the change was more than \$17 per cwt to the negative.

The costs of many inputs can vary considerably increasing the uncertainty that ranchers must deal with. For example, the price of corn at Omaha, Nebraska went from \$2.00 per bushel in September 2006 to \$4.00 in February 2007 and then down to \$3.00 by July 2007. One year later, the price of corn was over \$7.00 per bushel in July 2008 but by December of that year the price had dropped to \$3.50 per bushel. Diesel prices have also been very volatile the last few years.

In recent years, agriculture in general, as well as the cow-calf industry, have become more integrated with the energy sector of the economy. This has been the result of an increased amount of

corn being used in the production of ethanol and the price of ethanol, and therefore the price of corn, being directly related to the price of crude oil. Changes in corn prices directly impact the cost of gain in a feedlot and therefore impact how much feedlots are willing to pay for a calf.

Another trend, which has contributed to market uncertainty, is greater trade and globalization of many agricultural commodities including beef. As we rely more on export markets, factors such as the strength of the dollar, foreign exchange rates, and numerous other factors that impact economies around the globe all contribute to changing commodity prices in the US and add to the uncertainty in the market place. Managing this risk has become vitally important to the success of agricultural operations.

There are several tools available to help ranchers manage marketing or price risk. Which tools a rancher uses should depend on his individual ranch situation and risk-bearing willingness and ability. An understanding of the tools available for managing marketing risk can help agricultural producers develop better marketing plans that can reduce risks and limit variability of profit.

It is true that an individual rancher has little control over the market forces that determine the general level of commodity prices. Production decisions by thousands of independent cattle producers determine market supply and millions of consumers making daily purchase decision determine demand. The result of all these

independent decisions is a market price level. However, many agricultural commodities follow somewhat predictable seasonal price patterns and there are marketing and insurance tools available to producers to protect against unexpected price declines. This fact sheet briefly describes some of the marketing practices and tools that can be used to manage market risk.

Strategic Buying/Selling

Strategic buying of inputs and selling of outputs can reduce the effects of marketing risk on ranch profitability. Purchasing inputs for future use when prices are relatively low and expected to increase reduces the risk of being unable to meet increased costs if input prices rise. Similarly, selling outputs when prices are favorable and expected to decline reduces the risk of losses if output prices do fall. Strategic buying may necessitate storing excess inputs planned for future use that were purchased when prices were low. For example, hay may be purchased in the summer at a lower price than if purchased in the late winter when it is needed. Storage of commodities, however, can also introduce other types of risk (theft, spoilage, etc.) and the cost of the money (interest) must be added into the cost of the hay. Calves do not store well. Therefore altering sale time to market when prices are higher may not be practical. Selling earlier will result in a lighter calf. Selling later would result in a heavier calf with greater feed costs in the animal. However, perhaps a strategic decision to alter calving dates and weaning dates to be better positioned for higher markets could be made.

Forward Contracting

A contract is a legal agreement between buyer and seller and can be used to reduce marketing risk with inputs and outputs. Forward contracting is a way of separating the pricing and delivery decision. For example, a producer may determine it is most economical to wean calves in October, but may choose to price them in July. The rancher has eliminated the price risk for calves. If prices decline, the rancher still receives the

contract price. However, if prices rise, the rancher can not take advantage of the higher price.

A rancher could forward contract with an input supplier for future delivery of the input (hay, grain, fuel, etc.) at a specific price. Such a contract would protect the producer from higher costs if input prices increase. However, if input prices fall the rancher is still required to pay the contracted price.

Forward contracts eliminate market risk but do nothing to protect against production risk. The contracts require the rancher to deliver the agreed upon amount and quality of the commodity at the agreed upon time, increasing the possible negative outcomes associated with production risk. Thus, it is important to also manage production risks to ensure the ability to meet all the terms of the marketing contract.

Hedging

Hedging can also be used to manage input or output price risk and involves the purchase or sale of a commodity futures contract. To reduce input price risk, a producer would purchase a commodity futures contract. By doing so, he is obligated to purchase the contract amount of the input commodity at the expiration date of the contract. Before the contract expires and purchase is required, the rancher would resell the contract and purchase the input commodity on the cash market. If input prices had risen over the course of the contract, the producer would pay a higher price for his inputs on the cash market, but would also receive a higher price on his futures contract that would largely offset his increased costs for the inputs.

To reduce output price risk, a producer would sell a commodity futures contract, thus agreeing to sell the contracted amount of his output commodity at the expiration of the contract. Before the expiration of the contract, the producer would repurchase the commodity futures contract; otherwise he would be obligated to deliver the commodity. By repurchasing the contract, the

producer can then sell his commodity on the cash market. If cash prices had fallen over the duration of the contract, the loss of revenue in the cash market would be offset by a gain as the futures contract is repurchased at a lower price. Conversely, if cash prices had risen, the repurchasing of the futures contract at a higher price would also offset the gain in the cash market. Thus, any gains or losses incurred in the cash market would be offset by a corresponding loss or gain in the futures market, reducing price variability and market risk for the producer.

Options

To manage input price risk, a producer can pay a premium to purchase a call option, or the right, but not the obligation, to purchase an underlying futures contract. Thus, if input prices rise, the producer can exercise his option and purchase the underlying futures contract and then sell the contract at the higher price to capture the gain. However, if input prices fall, the farmer is not obligated to purchase the contract or bear the offsetting loss on the futures contract. The premium is the cost the producer pays to be protected against rising input costs, but he can still enjoy benefits from falling input prices.

To manage output price risk, a producer would purchase a put option. The put option is the right to sell an underlying futures contract. In this case, if the price of his output commodity fell, the producer would exercise his put option and sell the underlying future contract. Then he would

repurchase it at the lower price and offset his loss in the cash market. If commodity prices rose, however, he would simply sell the commodity in the cash market and realize the gain from the higher price. Thus, the premium for the put option protects the farmer from falling prices, but he can still benefit if prices rise.

A number of different fact sheets on forward contracting, futures hedging and options can be accessed from the Western Risk Management Library at the following web site:
<http://agecon.uwyo.edu/RiskMgt/MarketRisk/MA RKETDEFAULT.htm>

LRP Insurance

The purchase of Livestock Risk Protection (LRP) insurance for feeder cattle is another tool to manage marketing risk. It is similar to purchasing a put option. However, producers can choose the number of head they want to insure and are not locked in to a fixed contract size. More information on LRP Feeder Cattle insurance can be accessed at:
<http://www.rma.usda.gov/pubs/2007/lrp-feedercattle.pdf>

Another insurance program is the Adjusted Gross Revenue-Lite (AGR-Lite) insurance. This insurance product will insure against both market risk and production risk for the ranch. More information on AGR-Lite is available at:
<http://www.rma.usda.gov/pubs/rme/agr-lite.pdf>

Utah State University is committed to providing an environment free from harassment and other forms of illegal discrimination based on race, color, religion, sex, national origin, age (40 and older), disability, and veteran's status. USU's policy also prohibits discrimination on the basis of sexual orientation in employment and academic related practices and decisions.

Utah State University employees and students cannot, because of race, color, religion, sex, national origin, age, disability, or veteran's status, refuse to hire; discharge; promote; demote; terminate; discriminate in compensation; or discriminate regarding terms, privileges, or conditions of employment, against any person otherwise qualified. Employees and students also cannot discriminate in the classroom, residence halls, or in on/off campus, USU-sponsored events and activities.

This publication is issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Noelle E. Cockett, Vice President for Extension and Agriculture, Utah State University.