

# Fundamentals of Managing Market Risk

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## 1. First Things First: Know your Cost of Production

Record keeping and planning are important management functions for any business, particularly for one as unpredictable as the cow-calf business. However, record keeping, and planning will not lead to improved profits unless the records are used to identify management opportunities and cost savings. Knowing cost of production is a critical aspect of managing market risk. Most cow-calf operations in New Mexico are range forage-based operations. When drought adversely impacts this forage base the entire cost structure is negatively impacted. Either through the cost of additional resources needed to offset the loss in the range forage base, in the immediate period during or through the diminished performance of grazing animals. Depending on the severity of the drought, impacts can extend into the future. Production and marketing decisions must be evaluated with a fresh and often innovative, set of production and marketing assumptions.

### Background on Cost of Production

A good way to start looking for production, marketing, and other management opportunities and improvements is by looking at benchmark production costs, such as cow costs. Comparison of your ranches' production costs to benchmark data enables planning and insights that can be useful while navigating drought conditions and their impacts on the cow-calf operation. To avoid unintended consequences, reducing cow costs must be examined carefully. According to Integrated Resource Management (IRM) data, high-efficiency producers have lower annual cow-carrying costs, lower winter feed and total supplement cost, and lower interest on debt. In addition, this data also confirms high-efficiency producers have higher reproductive rates and heavier weaning weights than high-cost producers. IRM data identified a few cost areas such as pasture, bulls and herd health where high-efficiency producers spend just as much as high-cost producers. These are areas where spending less often causes a potentially larger drop in herd productivity and can ultimately raise total costs.

Table 1 reports Key Standardized Performance Analysis (SPA) measures for New Mexico between 2012 and 2016. The SPA data reports an average total cow cost before non-calf revenue adjustment of \$823.22, or \$192.51 per cwt of wean calf production. Table 2 reports estimated average cow calf cost, cash cost and cash rent for cow herds across the United States. Table 2 illustrates how cow cost have continued to rise sharply since 2011, the last recorded major drought. Table 2 reports an estimate annual cash cow cost of \$818.90 for 2020. Assuming a level of production consistent with the SPA data reported in Table 2, i.e.—86% weaned calf crop, 549 lb. weaned steer calves and 525 lb. weaned heifer calves, you would need approximately \$1.86/lb. for steer calves and \$1.83/lb. for heifer calves to cover the annual cow cash cost of \$818.90/cow.

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Table 1: New Mexico Cow-Calf SPA Key Measures Summary, 2012-2016

## New Mexico Cow-Calf SPA Key Measures Summary

States: NM; Regions: all regions; Years: 2012 2013 2014 2015 2016

Producers: all producers; Enterprises: all enterprises; Number of Herds: 4; Herd Sizes: from 360 to 434 Total Cows: 1,562

<i>Herd Related Measures</i>	<i>Production Measures</i>		<i>**Weighted</i>	<i>***Standard</i>	<i>****Coef. of</i>
	<i>Average</i>	<i>Average</i>	<i>Deviation(+/-)</i>	<i>Variation(%)</i>	
Pregnancy percentage*	92.8	92.8	3.5	4	
Calving percentage	87.7	87.6	5.3	6	
Calving death loss based on exposed females	0.5	0.5	1	200	
Calf crop or weaning percentage	86.7	86.6	4.6	5	
Actual weaning weight, steers and bulls	549.3	549.2	7.9	2	
Actual weaning weight, heifers	525.5	525.5	3.3	1	
Average weaning weight	537.3	537.2	4.6	1	
Pounds weaned per exposed female	466	465.5	26.6	6	
<i>Other Physical Performance Measures</i>					
Raised feed acres per exposed female	0	0	0	19	
Grazing feed acres per exposed female	62	61.6	11.7	19	
Pounds weaned per acre utilized by the cow-calf enterprise	7.7	7.7	1.2	16	
<i>Pay Weight Prices Per Cwt.</i>					
Weaned calf pay weight price - steers/bulls	\$220.00	\$219.20	\$52.33	24	
Weaned calf pay weight price - heifers	206.2	205.19	45.03	22	
Weaned calf pay weight price - weighted average	213.03	212.11	48.44	23	
<i>Financial Measures*****</i>					
<i>Investment and Returns (ROA)</i>					
Total Investment Per Breeding Cow - cost basis	\$4,738	\$4,716	\$345	7	
Percent Return on Assets - cost basis	4.72%	4.60%	11.74%	249	
Total Investment Per Breeding Cow - market value	\$14,976	\$14,898	\$1,227	8	
Percent Return on Assets - market value	1.50%	1.47%	3.73%	248	
<i>Financial Performance</i>					
Raised/Purchased Feed Cost per cow	\$243.14	\$242.92	\$89.49	37	
Grazing Cost per cow	61.89	62.09	9.21	15	
Total Cost Before Noncalf Revenue Adjustment per cow	823.22	822.26	146.28	18	
Total Cost Before Noncalf Revenue Adjustment per cwt	192.51	192.38	69.82	36	
Total Cost Noncalf Revenue Adjusted per cow	736.32	738.67	239.13	32	
Total Cost Noncalf Revenue Adjusted per cwt - Unit Cost	175.03	175.56	88.52	51	
Net Income After Withdrawals per cow	230.3	222.61	563.38	245	
Net Income After Withdrawals per cwt	38.01	36.56	132.12	348	
<i>Economic Performance</i>					
Total Cost Noncalf Revenue Adjusted per cow	\$969.45	\$970.71	\$236.88	24	
Total Cost Noncalf Revenue Adjusted per cwt - Unit Cost	228.34	228.68	97.11	43	
Net Income After Withdrawals per cow	-2.84	-9.44	559.72	19,743	
Net Income After Withdrawals per cwt	-15.31	-16.57	139.99	914	

\*Based on Pregnancy tested herds. \*\*Weighted Averages are calculated on number of breeding cows.

\*\*\*Standard deviation measures variability; 68% of the herds fall within one standard deviation (+/-) of the average.

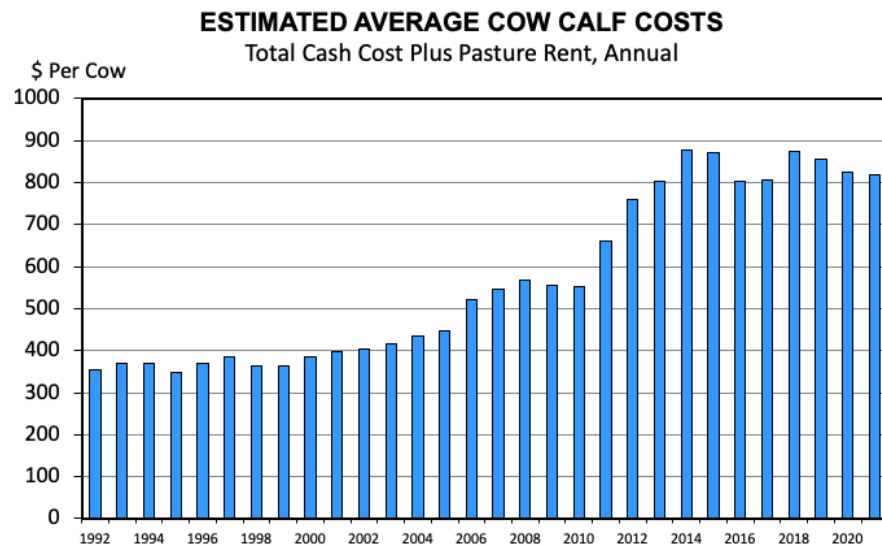
\*\*\*\*Coefficient of Variation is the standard deviation expressed as a % of the average.

\*\*\*\*\*Measures are calculated on a pretax basis.

Depending on the year, the individual ranch forage situation, and ranch management, feed costs typically account for 20 to 40 percent of total cash operating costs, often the difference between a low cost and high cost producer. In drought years it is not uncommon for feed and pasture cost to exceed 50 percent of total operating cost for many producers. However, drought or no drought, if feed and pasture costs exceed 60 percent of total cash operating costs, an in-depth analysis of feed production, purchasing and management is warranted.

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Table 2: Estimate Average Cow Calf Costs, 1992-2020



One of the best tools for evaluating cow costs is the cow-calf enterprise analysis. The enterprise analysis is based on an expanded version of the cow-calf profit formula, where: **Profit or loss = [((% calf crop x weaning weight) x price) + ((% cull livestock sales x weight) x price)] – costs per cow**

Initially, as you work on your individual enterprise analysis, identify and report all possible cost categories for your cow-calf enterprise. Adjustments can then be made to initial cost allocations. For example, if fuel and oil costs are reported for cattle and crops, then only the portion that reflects the fuel and oil costs for the cow-calf enterprise should be allocated to cattle. If costs for hay and cattle production are combined, and all or a portion of the hay is fed to the cows, then an equivalent portion of hay production costs should be charged to the cow-calf enterprise.

Cow herd productivity goals, i.e., weaning weight, cow size, and milk production should be balanced with the ability to maintain least-cost supplement and rations as well as sufficient forage availability. The primary physiological value of cattle is their ability to utilize forages. Therefore, to lower and efficiently “manage” feed costs, the focus should be on the amount of supplemental feed beyond the nutrient value provided by grazed forages, which typically determines the competitiveness of cow-calf enterprises.

Lower cost producers achieve better-feed conversion by using the least costly feed resources. They focus on grazed forage resources instead of expensive purchased or mechanically harvested feeds. Grazing management is the most important factor for successful and sustained range livestock production in any economic or environmental climate. Ultimately, livestock producers are in the business of forage production. Precipitation, forage, and grazing management are significant factors in profitable cow-calf operations, as is the ability to match the right cow genetics with available resources.

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The Cow-Calf enterprise analysis is one tool for determining cow cost. Being a “high-efficiency” will be critical to survival during prolonged drought and uncertain markets. This will require good management, which is a goal-directed activity. Below is a list of cow-calf enterprise budget resources that can be used to assist cow-calf operations determine annual cow costs.

For additional Cow-calf enterprise budget information and methodology visit:

- NMSU Coop Ext. <http://aces.nmsu.edu/drought/index.html>
- Texas A&M Agri-life <http://agecoext.tamu.edu/?id=954>
- Iowa State Extension <http://www.extension.iastate.edu/agdm/livestock/html/b1-21.html>
- Oklahoma State University <http://beefextension.com/new%20site%202/cccalc.html>