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HEIFER PRICE DISCOUNT TO STEERS IN TENNESSEE CALVES AND FEEDER CATTLE

Andrew P. Griffith, Associate Professor, Department of Agricultural and Resource Economics

Cow-calf producers breed cows that then produce bull or heifer calves. Producers then can make management decisions to influence the selling price of these animals in a number of ways. One of those decisions is to castrate bull calves or to leave them intact at the time of marketing. Martinez (2020) provides details as it relates to the price discount for bull calves relative to steer calves in Tennessee. He demonstrates that bull calves are discounted compared to similar weight steers and that the price discount for bulls increases as weight of the animal increases.

Similar to bull calves being discounted relative to steer calves, heifers are typically discounted relative to steers. However, the management decisions associated with navigating the heifer price discount is not as clear as turning a bull into a steer. In natural service breeding, where the bull physically breeds the cows, a cow-calf producer can expect half of the calves to be bulls and half to be heifers at birth. One management decision that can be made to increase the number of animals of a certain sex to be born is to use sexed semen in an artificial insemination protocol. However, this may be cost prohibitive for many cow-calf producers. Thus, producers are left to navigate the heifer price discount with approximately half of the annual calf crop.

The reason heifers experience a price discount relative to steers is largely associated with feed conversion and lower daily rates of gain, which results in a higher cost of gain for heifers relative to steers (Williams et al. 2002). Thus, buyers of heifers must pay less for the heifers relative to steers to experience similar profitability margins. With the understanding of these reduced efficiencies, cattle producers look for ways to reduce the impact of these price discounts and add value to heifers.

Given these typical market characteristics, several questions arise as it relates to heifer price discounts and marketing strategies. Thus, the purpose of this publication is to:

1. Evaluate changes in heifer price discounts to steers in Tennessee by weight class from 2001 to 2022,
2. Compare seasonal heifer price discounts on a monthly basis, and
3. Discuss management decisions that may be beneficial in some circumstances.



PRICE DISCOUNT CHANGES FROM 2001 TO 2022

Figure 1 displays the percent discount of medium and large number 1 and number 2 heifer prices to similar grade and weight steers in Tennessee from 2001 to 2022. It is important to evaluate these changes in discounts using a percent (i.e. (heifer price – steer price) ÷ steer price × 100), because changes in nominal prices could be misleading. Thus, there are two key takeaways from Figure 1. The first is that heavier heifers tend to be discounted less than lighter weight heifers. The second is that the price discount for heifers on a percentage basis appears to have increased during the period evaluated.

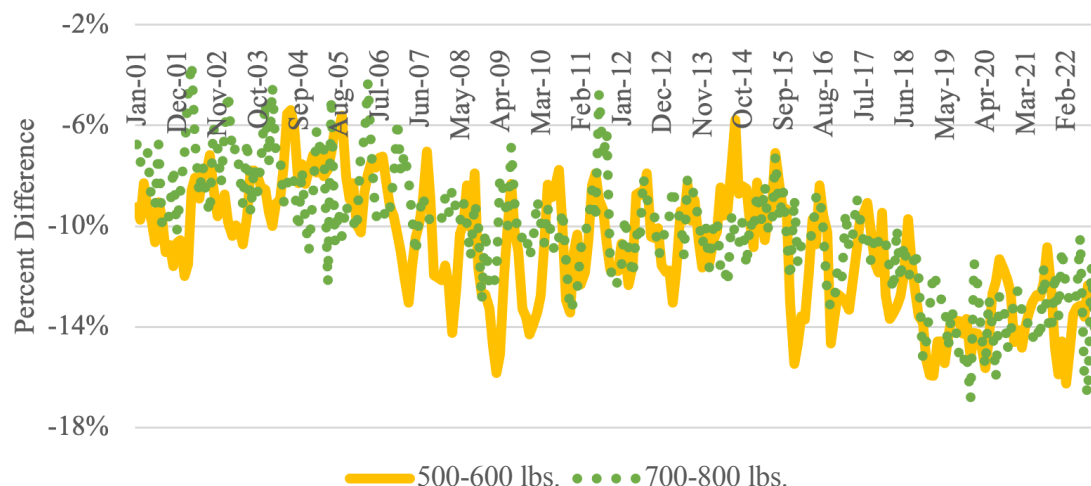


Figure 1. Medium and large number 1 and 2 heifer price discounts to same weight steers in Tennessee from 2001 through 2022 (USDA-AMS, 2023).

Table 1 provides an example of the difference in the quantity of feed and the number of days necessary to finish 600- and 800-pound steers and heifers at a final weight of 1,300 pounds. If a feedlot operator purchases a 600-pound heifer with intentions of her finishing at 1,300 pounds, then that feedlot operator must manage a less efficient animal compared to a steer for 700 pounds of gain. If the average daily gain is 3.5 pounds and the feed conversion ratio is 7 pounds of feed to a pound of gain for the heifer, then it will take 4,900 pounds of feed and 200 days on feed. Alternatively, a 600-pound steer entering the feedlot with a feed conversion ratio of 6.5 pounds of feed for a pound of animal weight gain and an average daily gain of 3.8 pounds only requires 4,550 pounds of feed and 184 days on feed. Thus, the steer requires 350 pounds less feed and sixteen fewer days on feed. Similarly, the feedlot operator could purchase an 800-pound heifer with the same intentions and only have to add 400 pounds of gain, which means the heifer would only be in the feedlot for 143 days and only consume 3,500 pounds of feed compared to an 800-pound steer who only needs 3,250 pounds of feed and 132 days in the feedlot. This means the 800-pound heifer required an additional 250 pounds of feed and 11 more days on feed compared to the steer. However, the 800-pound heifer is discounted less than the 600-pound heifer when compared to the same weight steer because the feedlot is dealing with the inefficiency for a shorter period of time and across less feed resources. This is working under the assumption that the 1,300-pound heifer and steer will sell for the same price, which is typical.

Table 1. Comparison of quantity of feed and days on feed with different beginning weight heifers.

	HEIFER		STEER		EQUATION
Beginning weight (lbs.)	600	800	600	800	a
Ending weight (lbs.)	1300	1300	1300	1300	b
Weight gain (lbs.)	700	500	700	500	c (b - a = c)
Feed Conversion Ratio (lbs. feed:lbs. gain)	7:1	7:1	6.5:1	6.5:1	d
Total feed (lbs.)	4900	3500	4550	3250	e (c x d = e)
Average daily gain (lbs.)	3.5	3.5	3.8	3.8	f
Days on feed	200	143	184	132	g (c / f = g)

As mentioned, the second key takeaway is that heifer price discounts to steers have increased over the time period evaluated. The exact reason for this is not fully understood, but it is likely associated with increasing feed prices. As feed prices increase, it exacerbates the previously mentioned feed inefficiency of heifers relative to steers. Thus, there is a greater need to discount heifers relative to steers. A second reason is the risk of heifers being pregnant. As cattle prices have increased, buyers of these cattle are taking on larger capital risks and thus other risks such as pregnant females must be accounted for in the purchase price. This is not likely a major factor, but it should not be overlooked.

SEASONAL HEIFER PRICE DISCOUNTS

Cattle prices have a seasonal pattern that is largely influenced by supply and demand fundamentals. Similarly, heifer price discounts vary throughout the year and are largely influenced by supply and demand. Figure 2 displays the average heifer discount compared to same weight steers from 2018 through 2022. Price discount variability throughout the year tends to decline as heifer weight increases. Lighter weight heifers tend to have larger discounts compared to their steer counterparts when supply of lightweight cattle is greatest. Alternatively, the price discount for heifers relative to steers appears to be lowest during the summer months when many cattle are placed in feedlots and are expected to come off feed during the height of live cattle prices in late winter and early spring.

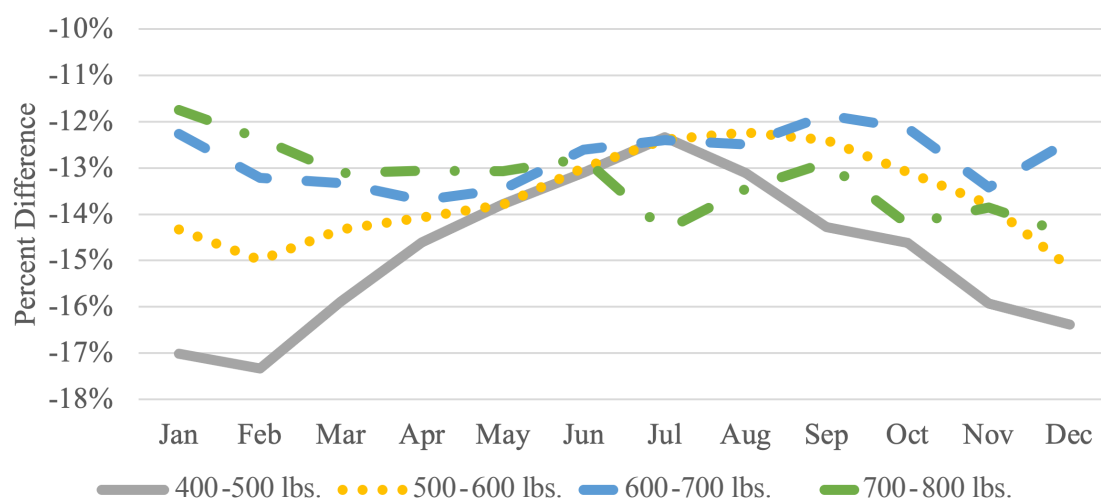


Figure 2. Monthly average heifer price discount compared to same weight steers in Tennessee from 2018 through 2022 (USDA-AMS, 2023).

MANAGEMENT DECISIONS

There are several management decisions this information can assist with. The first is determining the allocation of feed resources. For instance, if there is not sufficient forage to graze the entire calf crop after weaning then producers may consider selling the steers and growing the heifers to heavier weights such that they do not experience the most heavily discounted weight classes compared to steers. This may be even more advantageous during months when the discount is expected to decline with seasonal tendencies. Similarly, producers may consider selling the heavier steers and heifers and using feed resources to continue growing the smaller animals if feed resources are limited.

A second management decision this may assist with is planning an alternative marketing arrangement for heifers. Heifers can be sold as feeder cattle, open heifers for breeding, bred heifers or finished cattle. Thus, producers may find it advantageous to market bred heifers or use them in a freezer beef system or some other type of finished cattle system. These alternatives force the producer to take on more risk such as failure of the animal to breed or the cost of the feed inefficiency when finishing the heifers.

Understanding these heifer price discount patterns not only can assist sellers of heifers but buyers may also be able to use this information to their advantage. Thus, buyers can benefit from realizing market trends by purchasing heifers when their relative value compared to a steer is lower and market those heifers when their relative value is higher compared to a steer.

CONCLUSION

Heifers tend to be discounted relative to same weight steers when it comes to calf and feeder cattle weight classes. The reason for the discount is largely due to heifers growing slower and having inferior feed efficiency when compared to steers. However, cattle producers can make advantageous management decisions to reduce the negative impact of such discounts. This publication attempts to provide the basic information as it relates to heifer price discounts to steers in Tennessee and some ideas of managing through this market characteristic.

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