The U.S. Beef Industry
Cattle Cycles, Price Spreads, and Packer Concentration

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Introduction

Cattle producers generally acknowledge the existence and importance of the cyclical behavior of cattle inventories, which have peaked in the United States about once a decade for the last century. Many cattle producers say, however, that conditions during the cycle that began in 1991 are worse than conditions during previous cycles. In 1996, a combination of conditions created an atmosphere in which some producers charged that the cattle industry was adversely affected by high concentration and market power of beefpackers (U.S. Department of Agriculture, 1996). These conditions included: (1) low cattle prices combined with widening farm-to-retail beef price spreads, (2) a low farmer share of consumer spending on Choice beef, (3) negative returns in the feeder and fed cattle markets, and (4) reports of high profits for beefpackers. In addition to these perceptions, peak cattle inventory numbers for the cattle cycle of the 1990's coincided with record-high grain prices. The U.S. farm price of corn, which averaged $2.26 per bushel in 1994/95, rose to a peak of over $5.00 in July 1996. In addition, severe drought in 1995 and 1996 in some major cattle-raising areas forced many cow-calf producers to reduce cow herds as forage supplies declined. Packers were accused of using their market power to lower bids for cattle, thus lowering prices for producers. Some financially stressed livestock producers pressed for government intervention in cattle markets.

This report presents results of a set of related analyses designed to bring perspective to the allegations and the debate surrounding cattle cycles, price spreads, market concentration, and the interactions of the three. One objective of this study is to test the hypothesis that conditions at the turning point in this cattle cycle of the 1990's were no more severe than those of past cattle cycles in terms of inventory, price, price spread, or net income effects. Results from tests of this hypothesis indicate that the cycle of the 1970's was actually much worse than this cycle of the 1990's, with average estimated losses almost twice as much per cow at the low point in the 1970's as in 1996 for cow/calf producers. Further, while overall price spreads for Choice, yield grade 3 steers are growing wider over time, the farm-to-wholesale portion is only slightly wider than its narrowest levels since at least the 1970's in nominal dollars. In real dollars, the spread is at its narrowest levels since before the 1970's. We found no evidence to support the assertion that increasing slaughter concentration results in lower farm prices. The wholesale-to-retail portion of the price spread is growing because of packing-industry costs of added packing services and new products.

We begin this report with a background section where we describe and characterize cattle cycles and price spreads. We also present a historical sketch of increasing packer concentration and provide statistical analysis of the current cattle cycle. Accompanying economic data are examined to see if there are statistically significant differences from previous cattle cycles. We find that the most recent cycle's turning point is within the bounds associated with

previous cycle turning points, especially with respect to cow/calf profitability measures. Other cycles offer examples of more extreme values for selected variables like rates of change in cattle inventories, net returns per cow, and duration of various phases of the cattle cycle.

The next section of the report returns to price spreads and focuses on the relationships between price spreads and both the cattle cycle and packer concentration. The section begins with some general observations on the long-term and short-term behavior of price spreads. The model, more fully described in Appendix B, is an asymmetric model of three equations to characterize net farm, wholesale, and retail Choice beef price movements. We modified the model in several ways to examine interactions between prices at different levels in the farm-to-retail chain, as well as effects of the cattle cycle and packer concentration on price spreads. The asymmetric character of our model comes from a specification incorporating supply and demand variables that allow differences in the magnitude and speed at which prices adjust either up or down. Economists have estimated many models where the farm price moves first and drives the wholesale price, which in turn drives the retail price. Rather than pick the farm level (or any other) as the primary driver of all prices, our asymmetric model allows the retail, wholesale, or farm price to drive the others, and allows for complex interactions where all prices adjust simultaneously to movements of the others. Combining the price spread work with cattle cycle phenomena, we find only small cattle cycle-related effects on price spreads. We also find that, rather than being too low or wide, prices may not have been as low and price spreads may not have been as wide as model results indicate they could have been.

The last section of this report describes results from previous studies and the measures we developed and used to measure packer concentration. Then, we assessed these measures through the 1991-to-present cattle cycle. These measures did not indicate that increased packer concentration adversely affected cattle markets. This section includes the results from modifying our asymmetric model to test for packer concentration effects on price spreads. We end the report with a brief section containing our conclusions and some possible implications.