Managing for Today's Cattle Market and Beyond

Price Determination versus Price Discovery

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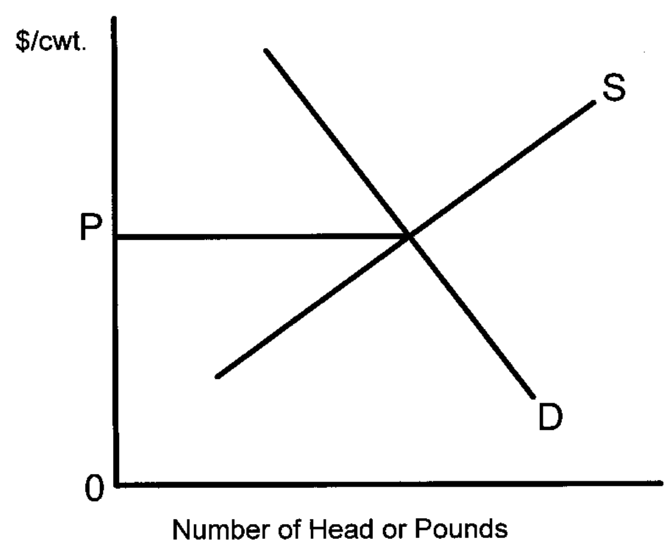
Low cattle prices are related to price determination factors, not price discovery factors. Low prices result from supplies which are large relative to current beef demand conditions. Widely varying prices, both above and below the market price level, result from many factors directly affecting price discovery, of which captive supplies, market information, and meatpacking concentration could be contributing causes.

Price discovery is frequently confused with price determination. These are two related but different concepts which need to be understood when discussing prices and pricing issues. This fact sheet distinguishes between both concepts, identifies how they are interrelated, and provides an indication when price discovery concerns may increase.

Price Determination

Price determination is the interaction of the broad forces of supply and demand which determine the market price level. Figure 1 depicts a typical textbook diagram for price determination. It shows the interaction of a supply curve and a demand curve to determine the general price level (P). For fed cattle, supply determinants or factors affecting the quantity of beef produced include input prices (feeder cattle and grain), technology (growth promotants, etc.), and price of outputs produced from those inputs (fed cattle). Broad demand forces or factors affecting the amount of beef consumed include the price of products produced from fed cattle (beef), price of competing products (pork and poultry), consumer income, and consumer tastes and preferences.

Figure 1. Price Determination

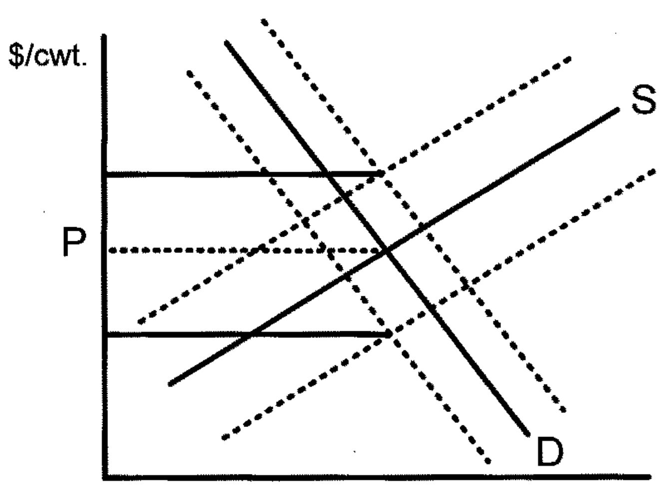


Price Discovery

Price discovery is the process of buyers and sellers arriving at a transaction price for a given quality and quantity of a product at a given time and place. Price discovery involves several interrelated concepts, among them: Market structure (number, size, location, and competitiveness of buyers and sellers); Market behavior (buyer procurement and pricing methods); Market information and price reporting (amount, timeliness, and reliability of information); and Futures markets and risk management alternatives.

Price discovery begins with the market price level. Because buyers and sellers discover prices on the basis of uncertain expectations, transaction prices fluctuate around that market price level. Price discovery is more difficult to show graphically, but Figure 2 is an attempt. We begin with the same diagram as in Figure 1. However, because of information uncertainty, we never know exactly the shape and location of the demand and supply curves. Therefore, we must estimate demand and supply, which is illustrated in Figure 2 by the dotted lines parallel to and on either side of the "true" supply and demand curves. Those estimated supply and demand curves intersect at a range of quantities and prices. Thus, discovered prices fluctuate above and below the general or market price level (P). This fluctuation is attributable to the quantity and quality of the commodity brought to market, the time and place of the transaction, and the number of potential buyers and sellers present. Other factors are the amount and type of public market information available, captive supplies, and packer concentration in the case of fed cattle prices.

Figure 2. Price Discovery



One type of price discovery research attempts to determine factors that explain variation in transaction prices. In the 1970s, most fed cattle were priced on a live weight, cash market basis. Factors affecting fed cattle prices included: (1) carcass beef prices; (2) live cattle futures market prices; (3) cattle quality (including sex, weight, quality grade, and yield grade); (4) sale lot size; (5) number of days between purchase and delivery of cattle; (6) number of packers bidding on cattle; (7) individual packing plants or firms; (8) time of year; and (9) region of the country (Ward 1981).

Many things have changed since the 1970s. Transaction prices for the same kind of price discovery research today would include more dressed beef (in the beef) prices and dressed weight and grade prices (formula prices) and more forward contract prices. Pricing models would include the following variables: (1) boxed beef cutout values (instead of carcass beef prices); (2) live cattle futures market prices; (3) cattle quality (including sex, weight, quality grade, and yield grade); (4) sale lot size; (5) number of days between purchase and delivery of cattle; (6) number of packers bidding on cattle; (7) individual packing plants or firms; (8) individual feedlots; (9) day of the week; (10) time of year; (11) region of the country; and (12) extent and type of captive supplies (Jones et al. 1992; Ward 1992; Schroeder et al. 1993; Ward, Koontz, and Schroeder 1996).

Price Discovery Interactions with Price Determination

Price determination and price discovery are interrelated. Price determination finds the market price level, and the general level of prices may be high or low. However, when market prices are low or are falling, questions and concerns about price discovery increase. Figure 3 is a matrix showing potential price discovery problems or concerns under given supply and demand scenarios. When demand is strong or expanding and when supplies relative to processing capacity are small or declining, price discovery

Figure 3. Price Discovery Concerns Under Alternative Price Determination Conditions.

	Demand for Beef	
Relative Supply of Beef	Strong or Expanding	Weak or Declining
Large or Expanding	Potential Concerns	Probable Concerns
Small or Declining	Unlikely Concerns	Potential Concerns

problems are generally not a major concern. Under these conditions, competition is generally keen, thus ensuring efficient price discovery. However, during the past couple years, the opposite conditions have existed. Beef demand studies indicate consumer beef demand has been weak or declining. During the part of the cattle cycle when inventory numbers increase, as they have during the early 1990s, beef supplies have been large or increasing. Under these conditions, large supplies of cattle nearly exceed processor demand. This causes low fed cattle prices and may heighten producers' price discovery concerns.

Compounding the problem in the past couple years has been large supplies of pork and poultry. The combined result is increased producer concerns about price discovery and accusations about captive supplies and packer concentration. Captive supplies and packer concentration affect price discovery, i.e. transaction prices resulting from given market conditions. However, the market price level is not a result of packer concentration or captive supplies.

Conclusion

The general level of prices reflects supply and demand factors. Individual transaction prices fluctuate around the general market price, whether it be high or low. Variation in transaction prices are related to many factors, including quantity and quality of cattle, and the timing and location of cattle sales/purchases.

To paraphrase the above in terms of cattle prices during the early-to-mid 1990s, low prices are related to price determination factors, not price discovery factors. Low prices result from beef supplies which are large relative to current beef demand conditions. Widely varying prices, both above and below the market price level, result from many factors directly affecting price discovery, of which captive supplies, market information, and meatpacking concentration could be contributing causes.

References

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