

## The Livestock Sector



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## Controversies in Livestock Pricing

Livestock prices fluctuate daily. Viewed over time and corrected for inflation, the longrun trend in livestock prices, like prices in the rest of the sector, is downward. Growth in productivity and economic competition have driven the longrun decline in the number of U.S. producers of most agricultural commodities. Declining real prices cause serious financial problems, leading to a decline in the number of producers.

Some producers allege that the livestock pricing system is one of the causes of declining prices. Many of the producers who are concerned about price discrimination or corporate farming have complained about concentration and captive supplies, and have called for Government action. This pressure has produced results, with several state legislatures enacting anti-price-discrimination and anti-corporate-farming laws. And the U.S. Congress enacted new mandatory livestock price reporting legislation in 1999.

Can declining livestock prices be attributed to structural changes in the industry? The U.S. livestock pricing and coordination system has been a topic of debate and a focus of public policy for well over a century. An excerpt from an 1890 report

of the Senate Select Committee on the Transportation and Sale of Meat Products illustrates.

*In place of the old system when shippers and butchers went from one cattle raiser to another, competing in the purchase of cattle, there is now a concentration of the market at a few points... So far has this centralizing process continued that for all practical purposes the [Chicago] market... dominates absolutely the price of beef cattle in the whole country.*

Concerns about industry practices continued into the 1900s. President Theodore Roosevelt ordered an investigation of the meatpacking industry after reading Upton Sinclair's novel *The Jungle*, which dramatized unsanitary processing plant conditions and manipulative business practices. When Roosevelt met Sinclair, he indicated that while he disapproved of the book's socialist leanings, he agreed that regulation of the industry was needed.

Federal action on the issue of concentration was seen in the Packers' Consent Decree of 1920 and the Packers and

Stockyards Act of 1921. Packers consented to divest themselves of stockyard real estate, railroads, and market newspapers, and to refrain from selling at retail. USDA was given power to govern against unfair or deceptive practices in the buying and selling of livestock. This, like other early legislation, worked to the benefit of producers—protecting sellers from dishonest scales and financial insolvency of marketing firms, and ensuring fair charges for yardage and services.

Changes in the business relationships between livestock producers and packers may have implications for the internal organization of livestock production. The importance of terminal and smaller auction markets declined significantly in the latter half of the 20th century. It became common again for packer-buyers to go directly to larger farms bidding on cattle—akin to the system the 1890 testimony lamented as having passed. Auction markets and directly negotiated sales between producer and packer—still operating but declining in importance—are part of what is called the “spot” market. Spot market transactions refer to livestock that are ready for immediate delivery at the time the agreement is entered. Spot-market sales include liveweight and carcass-merit pricing. Sales through auctions are on a liveweight basis.

Information flow is key to the efficient performance of an economic system, and livestock prices are the key information that coordinates producer and packer behavior. An advantage of centralized auction markets is the ease with which livestock price information is collected and disseminated. Government and private sources have been able to collect and disseminate price and other market information from many livestock and wholesale meat market areas. The rules under which transactions take place and the dissemination of information on prices and other terms of trade are considered vital to a well-functioning price discovery system.

This system has provided a trusted public outlet for an independent farmer's product at relevant times and locations. In most cases, producers could assess how their price and quality experience compared with other sellers and other locations. The decline of auction markets in relation to

other methods of procurement has led to new pricing controversies.

### Vertical Coordination Overtakes Spot Markets...

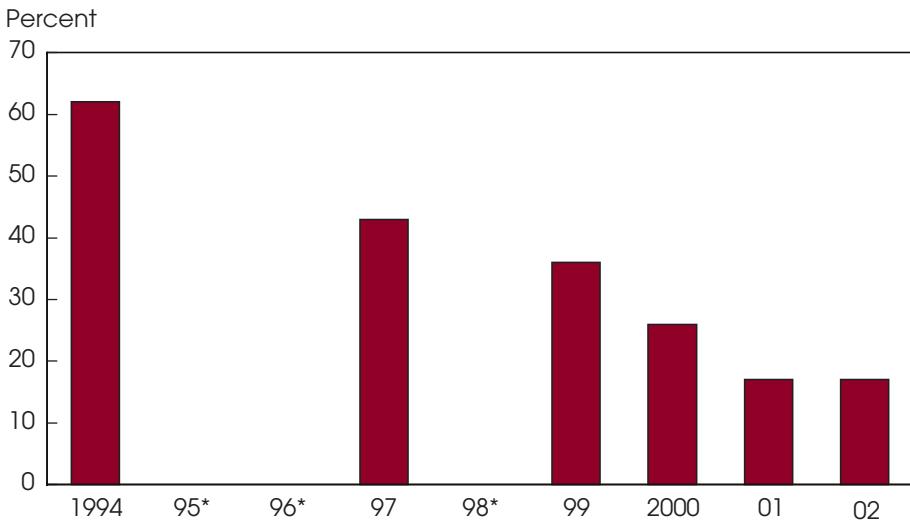
Current pricing controversies arise over the growing importance of various forms of vertical coordination between packers and livestock producers and the declining use of spot markets. Vertical coordination takes many forms, ranging from informal marketing agreements to packer ownership of feedlots and hog farms (and the livestock in them). Forms of coordination where packers take early ownership interest in livestock have proven particularly controversial. Cattle that are committed to or owned by a packer before they are ready for slaughter are termed "captive supply." Congress has debated several measures to prohibit or restrict these practices, but none have passed.

The cattle and hog industries differ in the degree and types of vertical linkages being used. The pork industry has shifted dramatically toward long-term contract coordination and packer ownership of production facilities, while cattle producers still rely more heavily on spot market or short-term arrangements with packers.

The situation has changed dramatically for hog production. About 87 percent of U.S. hogs were sold in the spot market in 1993, 2 percent owned by packers, and the remaining 11 percent bought on contract. By 2000 the share of spot-market hogs had dropped below 20 percent, while packer ownership climbed to 18 percent, and marketing contracts (or agreements) grew rapidly to over 60 percent. Spot-market sales of barrows and gilts were relatively stable since mid-2001.

For cattle, even though a majority are still sold through negotiated sales, spot-market fed-cattle deliveries as a percentage of market volume have decreased over the last decade in major cattle feeding states. In Colorado, Kansas, and Texas, for example, nonspot fed-cattle deliveries (additional movements) during the early 1990s typically represented less than 30 percent of fed-cattle weekly volume, while often exceeding 60 percent in the late 1990s. While the extent of formal ownership or contract integration has

### Share of U.S. Hogs Sold to Packers on the Negotiated Market Has Dropped Dramatically



\*Not available.

Negotiated market is comparable to the spot or cash market.

Source: Hog Marketing Contract Study, University of Missouri and National Pork Board, January 2002, <http://agebb.missouri.edu/mkt/vertstud.htm>.

Economic Research Service, USDA

remained stable near 20 percent of fed-cattle slaughter, the volume of negotiated spot-market transactions declined.

What factors have driven the decline in spot-market sales? The strength of the spot market is the easy dissemination of price information and ready access to buyers for producers. The weakness is its poor transmission of other relevant information. Government and private sources have collected and disseminated price and other market information from many livestock and wholesale meat market areas. Mandatory reporting of livestock prices has been the law since mid-2001 for certain categories of sales.

Spot-market livestock are priced based on readily observable animal characteristics. The problem is that these characteristics translate poorly into those that packers, and ultimately consumers, actually want. The apparent drop in demand for beef has often been blamed on lack of consistent beef quality that consumers demand.

Vertical coordination gives packers a mechanism for obtaining a consistent supply of higher quality animals. Some livestock producers also see advantages to

vertical coordination. Surveys showed that pork producers who entered marketing arrangements with packers identified higher prices and lower price risk as the two greatest advantages of having a marketing contract. Beef producers identified the advantages as higher carcass premiums, access to carcass data, and less time spent marketing cattle. Researchers reported that reduced risk and enhanced financing opportunities were benefits to feedlots from marketing agreements. One study reported that feedlots saw less advantage from risk reduction or financing options, but noted that feedlots did not feel pressured by packers to enter contracts. Thus there appear to be incentives for both parties—seller and buyer—to enter market contracts.

### ...& Obscures Prices

A potential problem with vertical coordination is that it weakens or disperses the availability of price information. In many types of coordination, the task of livestock pricing is solved by what is called "formula pricing." The packer pays the producer using a formula that includes quality premiums and discounts around some "base" price. The "base" price is usually some selected spot-market or futures-mar-

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### Livestock Industry: Some Marketing Milestones

- 1812** “Uncle Sam” is modeled after Sam Wilson, a meatpacker from Troy, New York. During the War of 1812, the meat he shipped to the government was stamped “U.S. Beef.” Soldiers began to call it Uncle Sam’s beef.
- 1850s** Cincinnati accounts for more than half the pork packed.
- 1861** Chicago surpasses Cincinnati in meat packing.
- 1866-80** Era of the cattle drives from Texas to Missouri and Kansas stockyards.
- 1890-1920** Series of Anti-trust and Unfair Trade Acts (Sherman Anti-trust, Meat Inspection Act, Clayton Anti-trust Act, Federal Trade Commission Act, Packers’ Consent Decree).
- 1921** Packers and Stockyards Act passed. Provides financial protection to producers and promotes fair and competitive markets for livestock, meat, and poultry. Administered by USDA’s Grain Inspection, Packers and Stockyards Administration.
- 1954** Census of Agriculture conducts special survey on poultry contracting.
- 1955** Omaha replaces Chicago as nation’s largest livestock market and meatpacking center.
- 1960-70** Independent meat packers establish plants in the countryside near livestock supplies.
- 1980-90** Mergers and acquisitions of independents into modern large national packers, several owned by even larger firms.
- 1996** For first time, purchases on carcass basis accounted for more than half the hogs sold. Price animal brings is unknown until animal is dead, skinned, graded, etc., and out of farmers’ control.
- 1999** For first time, purchases on carcass basis accounted for more than half the cattle sold. Price animal brings is unknown until animal is dead, skinned, graded, etc., and out of farmers’ control.
- 1999** Mandatory Livestock Reporting Act is signed into law.
- 2000** Senate (but not House) passed amendment to the Farm Bill to limit packer ownership and control of livestock production.
- 2001** USDA launched the mandatory price reporting system in April.

ket price. Various types of formula-based pricing methods have dominated sales of hogs by producers.

There is some concern that spot markets for cattle and hogs might disappear, as has essentially happened in poultry markets—and with it the public availability of price

information. As spot markets disappear, fewer price signals are available to convey messages to producers and consumers concerning available quantities, qualities, cost and value. Formula pricing in contracts also becomes problematic as too few animals are traded in public transactions to generate confidence in the prices. This leads to concerns about packers using vertical arrangements to artificially suppress the spot-market price. Market participants typically turn to other price series (e.g., meat or grain markets) when a market becomes too thin.

At the USDA Forum on Captive Supplies in 2000, economist and attorney Neil Harl gave a summary of objections to packer control of livestock production in 2000.

*On the face of it, captive supplies are discriminatory in effect... It is also reasonable to conclude that captive supplies are “unfair” to independent producers and that some features of captive supplies are “deceptive” in the operation and functioning of markets for cattle destined for slaughter. ...there is general agreement that increasing levels of concentration correlate with lower price levels.*

In fact, economic studies of the effects of increasing packer concentration and “captive supplies” on livestock prices, despite Harl’s contention, produce mixed results and often show little or no price-depressing effects of captive supplies or packer concentration.

In the early 1990s, Congress directed USDA’s Grain Inspection, Packer, and Stockyards Administration (GIPSA) to study concentration in the red meatpacking industry. The agency responded by contracting with universities and ERS for several research projects and developing a data set of cattle purchase transactions by 43 steer and heifer plants operated by all firms that slaughtered more than 75,000 steers and heifers annually (accounting for over 92 percent of total U.S. slaughterer) in 1992-93.

In one of the projects, a team from the Texas Agricultural Markets Research Cen-

### Use of Cash Markets Is More Common for Cattle Than for Hog Procurement

Procurement method	Fed cattle	Hogs
	Percent	
Cash or spot market purchase, live basis	36	8
Cash or spot market purchase, carcass basis	29	19
Formula-priced contract based on cash market	20	32
Fixed-price contract based on futures	4	8
Fixed agreement based on feed price	--	6
Risk-sharing contract purchases	3	8
Other purchase methods	4	1
Self production	5	18

May not total 100 due to rounding.

Source: "Meat Packer Vertical Integration And Contract Linkages in the Beef and Pork Industries: An Economic Perspective," special report for the American Meat Institute, May 22, 2000.

Economic Research Service, USDA

ter analyzed the determinants of differences in prices paid for individual lots of cattle. The team measured the effects of regional market concentration while controlling for characteristics of the transaction (such as lot size and pricing method), cattle quality indicators (weight, cattle type, and yield grade), and overall market trends (national daily cattle prices). Controlling for those other sale characteristics, larger price effects of concentration were found than previous research indicated. Cattle prices in regions with a single buyer were estimated to be 2 percent lower (on average) than prices in regions with two equal-sized buyers, and 2.7 percent lower than prices in regions with four equal-sized buyers.

Another study used monthly cost and revenue data for individual plants for 1992-

93. The cost data were used to assess the ability of packers to raise beef prices above competitive levels or to reduce cattle prices below competitive levels. While the research found a small amount of packer market power in product (beef) markets, no statistically or substantively significant departures from competitive prices in the input (cattle) market were present. In the highly concentrated cattle market of the period, cattle prices did not fall below competitive levels.

In a report by USDA's Economic Research Service (ERS), researchers investigated the relationships between farm, wholesale, and retail prices over the cattle cycle. Part of this study used monthly data from 1980 to 1997. ERS found that cattle prices in the early 1990s were slightly higher than would have been

expected, based on experience with previous cycles. Farm-to-retail price spreads also fell slightly as concentration trended upward during the 1980s and 1990s.

A fourth study designed a test for competition in packer purchases of fed cattle, and found that prices were pushed below competitive levels as packer concentration rose. However, the divergence was extremely small, and prices were quite close to perfectly competitive levels. Moreover, this research found that slaughter costs fell as concentration increased. The cost decline induced packers to purchase more cattle, and to drive cattle prices up—the price effect more than offset the direct effect of concentration on packer bids.

If the vertically integrated livestock marketing system appears to have, at worst, only minor effects in depressing livestock prices, what is the source of the longrun decline in real prices? While increasing supply will dampen price, the most important source of declining livestock prices is technical innovations which have led to increasing productivity. Increasing productivity means that livestock can be produced at lower costs or that more can be produced at the same cost. Economic competition among producers pushes livestock prices toward production costs.

AO

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### Further reading

**U.S. Beef Industry: Cattle Cycles, Price Spreads, and Packer Concentration, April 1999**  
[www.ers.usda.gov/publications/tb1874/](http://www.ers.usda.gov/publications/tb1874/)

**Briefing rooms and data on the Economic Research Service website:**  
[www.ers.usda.gov/briefing/cattle/](http://www.ers.usda.gov/briefing/cattle/)  
[www.ers.usda.gov/briefing/hogs/](http://www.ers.usda.gov/briefing/hogs/)  
[www.ers.usda.gov/briefing/poultry/](http://www.ers.usda.gov/briefing/poultry/)  
[www.ers.usda.gov/data/Meatsscanner/](http://www.ers.usda.gov/data/Meatsscanner/)

**Hogs and Pigs** (various issues). National Agricultural Statistics Service, USDA.

**"Meat Packer Vertical Integration and Contract Linkages in the Beef and Pork Industries: An Economic Perspective," special report for the American Meat Institute, May 22, 2000.**  
<http://usda.mannlib.cornell.edu/reports/nassr/livestock/php-bb/2002/>

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### Price Spreads & Marketing System Performance

Price spreads are one way of measuring performance of the meat marketing sector. The increasing spread between farm and retail prices has been cited as evidence that changes in market structure have lowered prices to farmers. Meat price spreads show how the value of an animal and the resulting meat products change as the animal (carcass) moves from the farm, to the packer, and finally, to the grocery store.

While price spreads are not particularly useful as measures of industry profits (other cost data are needed), longrun spread changes reflect longrun developments in industry efficiency. As firms become more efficient, their costs decline, and they can earn the same profits with lower spreads. If industries become more competitive or more economically efficient, spreads can also decline as excess profits are eliminated.

What effects would contracting and captive supplies have on price spreads? First, if captive supplies allow meat packers to run their plants more efficiently, contracts would lower the costs of meatpacking, which would tend to lower the farm-to-wholesale spread. Second, if captive supplies allow meat packers to exert market power, they would tend to widen the farm-to-wholesale spread. While farm-to-wholesale spreads have not kept pace with inflation over the past 30 years, the spreads for beef and pork have risen faster than inflation since the mid-1990s.

The effects of changes in government regulation such as mandatory price reporting and food-safety rules depend on which supply effect is most prevalent, and on compliance costs. Compliance costs borne by packers tend to be shifted forward to consumers and/or backward to producers.

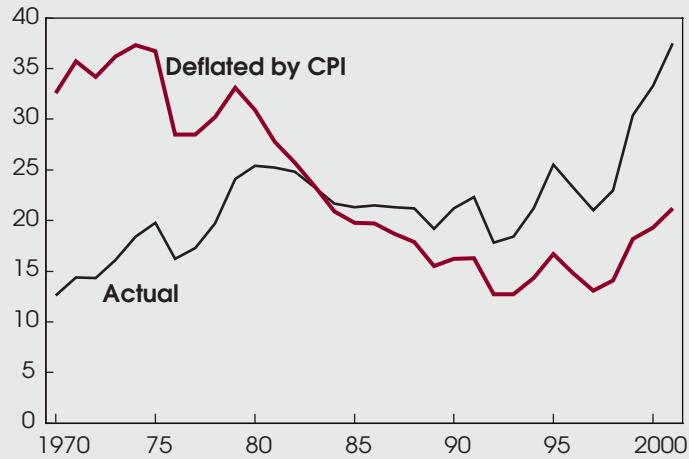
The share of cost shifted depends on relative responsiveness of consumers and producers to price changes. Cost shifting lowers producer prices and raises consumer prices. Lower producer prices tend to reduce livestock supply, while higher consumer prices reduce meat demand. The less responsive side of the market bears the larger part of the costs. Since livestock supply is unresponsive to price changes in the short run, part of the compliance cost will be borne by livestock producers.

The costs of complying with new government interventions will increase the farm-to-wholesale spread. If packers currently exert significant market power, spreads could drop if the new regulations lead to sufficient decreases in any abuses.

The largest component of the total price spread for beef and pork is the wholesale-retail component, which mainly reflects costs and profits of meat retailing. USDA's wholesale-retail spreads are less useful as a measure of costs and profits than the farm-wholesale spreads. The USDA retail value is the cost of buying an animal's meat parts at the grocery store. It is generally believed that grocery stores sell mostly lower and medium-priced cuts of the animal, while higher valued cuts go to the hotel and restaurant trade, and to exports.

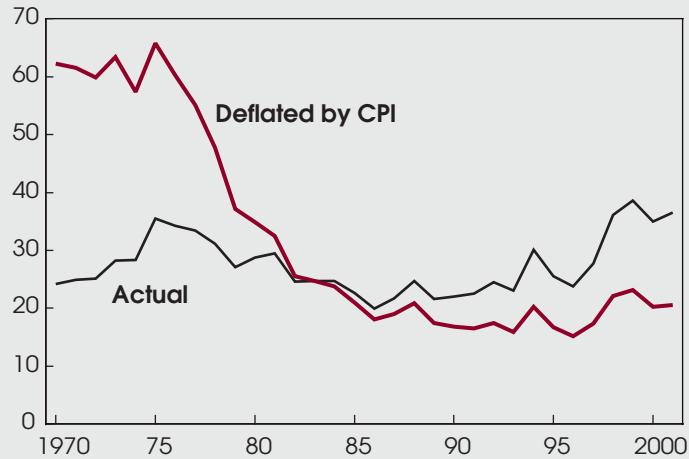
#### Farm-to-Wholesale Price Spreads Have Been Rising More Rapidly Than Inflation for Beef . . .

Cents per lb.



#### . . . but Not for Pork

Cents per lb.



Retail pound basis.

Economic Research Service, USDA

ERS' new retail scanner meat price database will give a better measure of what some grocery stores sell. Current USDA price spreads are based on retail prices reported by the Bureau of Labor Statistics (BLS), which in turn are based on average consumer prices. The scanner data weight prices by sales volume. Since lower prices are associated with higher sales, the scanner data's average Choice-grade prices tend to be lower than BLS's average prices. The wholesale-retail price spread has increased more rapidly than inflation over the past 30 years. There is evidence of declining productivity in grocery stores' overall operations. That translates into higher costs, which increases price spreads. **AO**

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