

BEEF PACKER CONCENTRATION AND BEEF PRICING ISSUES

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Packer concentration and pricing concerns date back to the late 1880's. Early concerns contributed to passage of the Sherman Antitrust Act of 1890 and later led to the passage of the Packers and Stockyards Act of 1921. In the mid 1960's, the National Commission on Food Marketing raised questions about beef pricing and price reporting, especially with changes occurring in the meatpacking industry. The more recent series of lawsuits and studies stem from a 1974 Wall Street Journal article which alleged price manipulation of the yellow sheet, the meat industry's principal source of reported wholesale meat prices.

Three major areas of concern can be identified: (1) beefpacker concentration; (2) wholesale beef pricing and price reporting; and (3) live cattle futures markets. This paper discusses: (1) these major issues; (2) reasons for producers' and others' concerns; and (3) what we have learned via studies of these issues.

MAJOR ISSUES

The U.S. House Committee on Small Business began a series of hearings in 1977 on problems in the meat industry. The Small Business Committee staff has also funded or conducted several studies focusing on three areas: (1) rapid structural changes in the beefpacking industry; (2) use of the National Provisioner's yellow sheet in pricing cattle, formula pricing wholesale beef and reporting wholesale beef prices; and (3) use of the futures markets and their influence on cattle prices.

In my opinion, the central issue is public confidence in our marketing system. The marketing system works! It moves large quantities of meat daily from producers to consumers - when, where and how they want it, and at reasonable prices. The question is, does it appear to producers and the general public that it works - and that it works fairly?

Public trust in our marketing system is important. Thus, cattlemen's concerns are legitimate. However, lack of confidence in the system should not be the basis for public policy making or legislation. Objective studies are needed.

Is there evidence the system has major inefficiencies, or functions unfairly? Identifying the clear trend toward fewer, larger packers does not imply guilt or wrong doing. However, if such a trend creates problems, we need to identify and correct those problems.

REASONS FOR PRODUCERS' CONCERNS

Why are producers and others concerned about these issues? Four overriding factors seem to have triggered many of the concerns. First, it is less likely that feeders voice concerns about price fixing, monopolization, and other such abuses of power when cattle feeding is profitable. However, a look at cattle feeding margins in the Corn Belt since 1974 shows that red ink (losses) exceeded black ink (profits) at the rate of 3 to 1 (Figure 1). Over the past eight years, there have been eight quarters of profitable feeding and 24 quarters of unprofitable feeding.

Second, congressmen and their consumer constituents are sensitive to rising beef prices. Feeders, too, are sensitive to rising retail prices, especially when they are losing money raising and feeding cattle. Retail beef prices have increased sharply from 1969 to 1981 (Figure 2). However, there have been a number of periods during that time (as was mentioned) when cattle feeding margins were unprofitable. Retail prices increased even when cattlemen were losing money. Deflating retail prices shows there has been little change in beef prices since 1969 in real price terms. However, congressmen, producers and consumers look at prices in actual or nominal dollar terms, rather than in deflated or real dollar terms.

Third, it seems cash and futures market prices are more volatile now than prior to the 1970's. Carcass prices sometimes move \$2 per cwt. or more per day, and futures market prices sometimes move limit up or down two or more consecutive days. This price volatility convinces some people that prices are being manipulated. However, feeders and others probably remember large price declines much more easily than equally large price increases.

Fourth, and very importantly, there has been a rapid change in the structure of the beefpacking industry. Several firms have exited the industry (for example: Illini Beef, Wilson Foods, Glover Packing, American Beef Processors, and Farmland Foods) in just the last few years. Other firms have opened large, new plants (for example: Iowa Beef Processors and MBPXL). Several other plants have been bought or sold, and closed or reopened. Iowa Beef Processors slaughtered about 2 million steers and heifers in 1970 and increased their slaughter to over 5 million head in 1980.

\$/cwt.

14.00

12.00

10.00

8.00

6.00

4.00

2.00

0

-2.00

-4.00

-6.00

-8.00

-10.00

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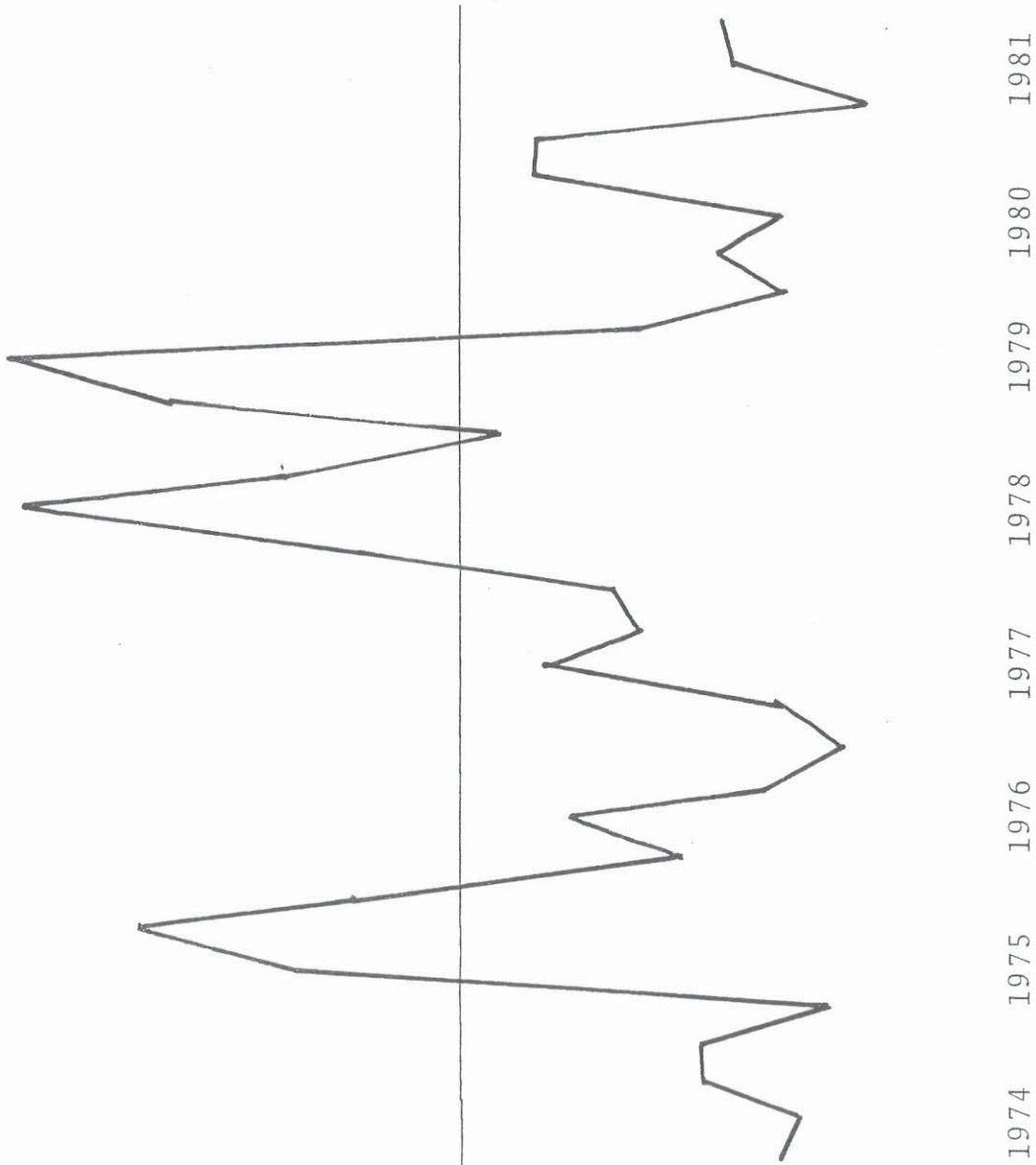


Figure 1. Net Feeding Margins in the Corn Belt, 1974-81.

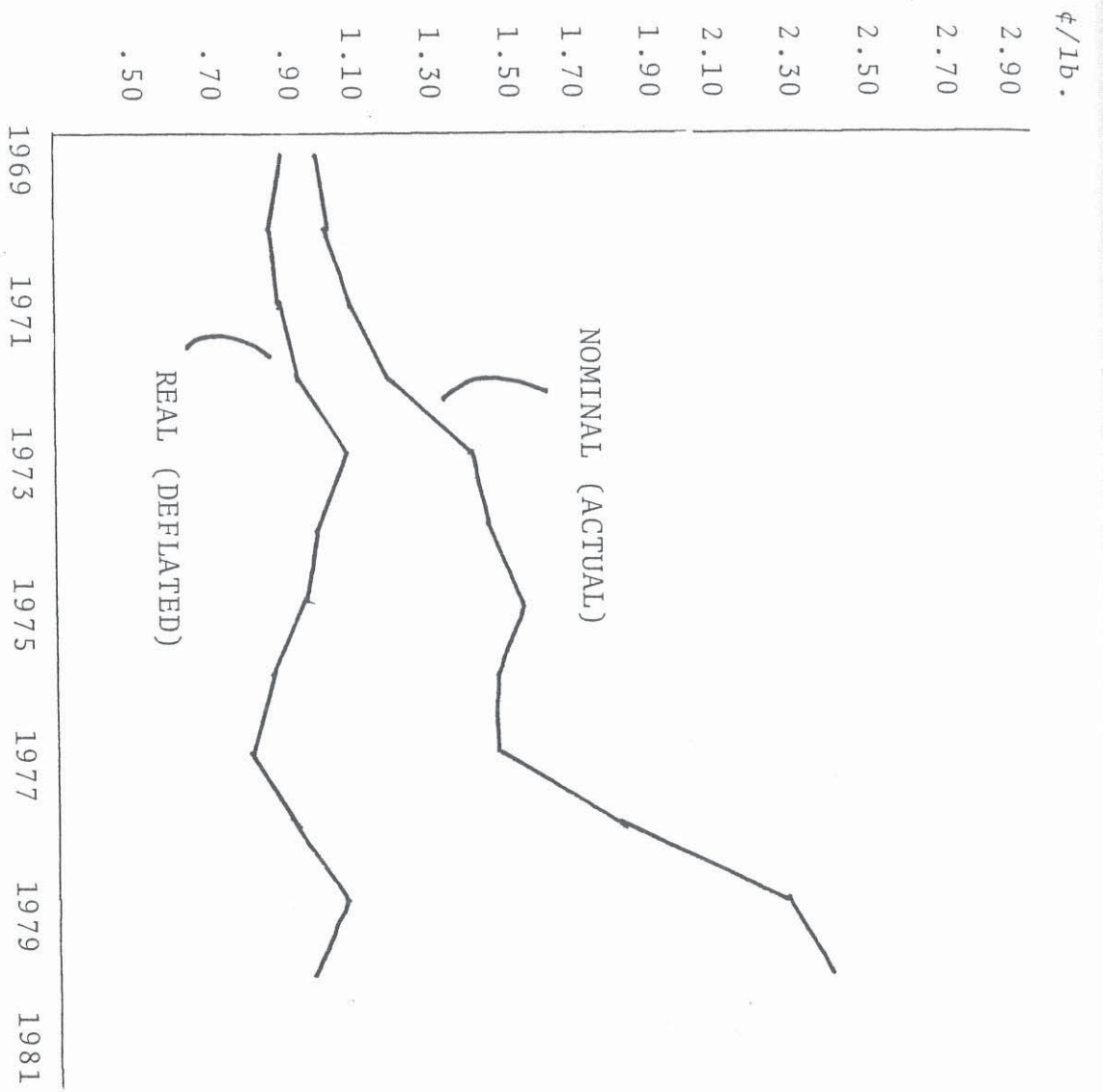


Figure 2. Retail Beef Prices in Nominal and Real terms 1969-81.

Their slaughter in 1980 exceeded the slaughters of the 2nd & 4th largest beefpackers combined. Iowa Beef's size alone is a major cause of concern to many cattlemen and others.

WHAT WE KNOW ABOUT THE ISSUES

Between 1970 and 1980, 386 plants ceased slaughtering steers and heifers, 40 percent of the 1970 total. The decline came in all size categories except the largest size plants. Plants slaughtering 500,000 or more steers and heifers increased from zero in 1970 to eight in 1980.

The relatively small growth of larger plants is more significant when combined with the loss of smaller plants. Figure 3 shows steer and heifer slaughter by size of packer. Packers slaughtering 500,000 or more steers and heifers accounted for 40 percent of total slaughter in 1970. However in 1980, firms slaughtering 500,000 or more steers and heifers accounted for 63 percent of total steer and heifer slaughter. On the average, these large packers each slaughtered 1,503,900 cattle in 1980.

The largest beefpackers have also changed since 1970 (Table 1). Six of the twenty largest packers in 1980, slaughtered fewer steers and heifers than in 1970. Five packers were not among the 20 largest in 1980, and four packers among the 20 largest in 1970 left the beef business between 1970 and 1980.

Many people express concern about increasing packer concentration. Whether concentration is increasing or decreasing depends in large part on the data selected to study. National concentration figures are relatively low by economists' standards. The four largest packers slaughtering steers and heifers in 1970 (Swift, Iowa Beef Processors, Armour, and Wilson Foods) accounted for 27 percent of total steer and heifer slaughtering. In 1980, the four largest beefpackers (Iowa Beef Processors, MBPXL, Swift, and Spencer Foods) accounted for 38 percent of total steer and heifer slaughter. Concentration increased and three of the four largest firms in 1970 were replaced by other packers by 1980.

State data yield different results. Figure 4 shows the proportion of steer and heifer slaughter by the four largest firms in each of the major cattle feeding states in 1980. Note that the four largest buyers are not necessarily the same in each state. Economists usually consider market shares of 65 percent or more by the four largest firms as an indication of relatively high concentration. With state data, concentration is 65 percent or more in 19 of the 23 major cattle feeding states.

Figure 3. Number of Steers and Heifers Slaughtered
By Firm Size, 1970-1980.

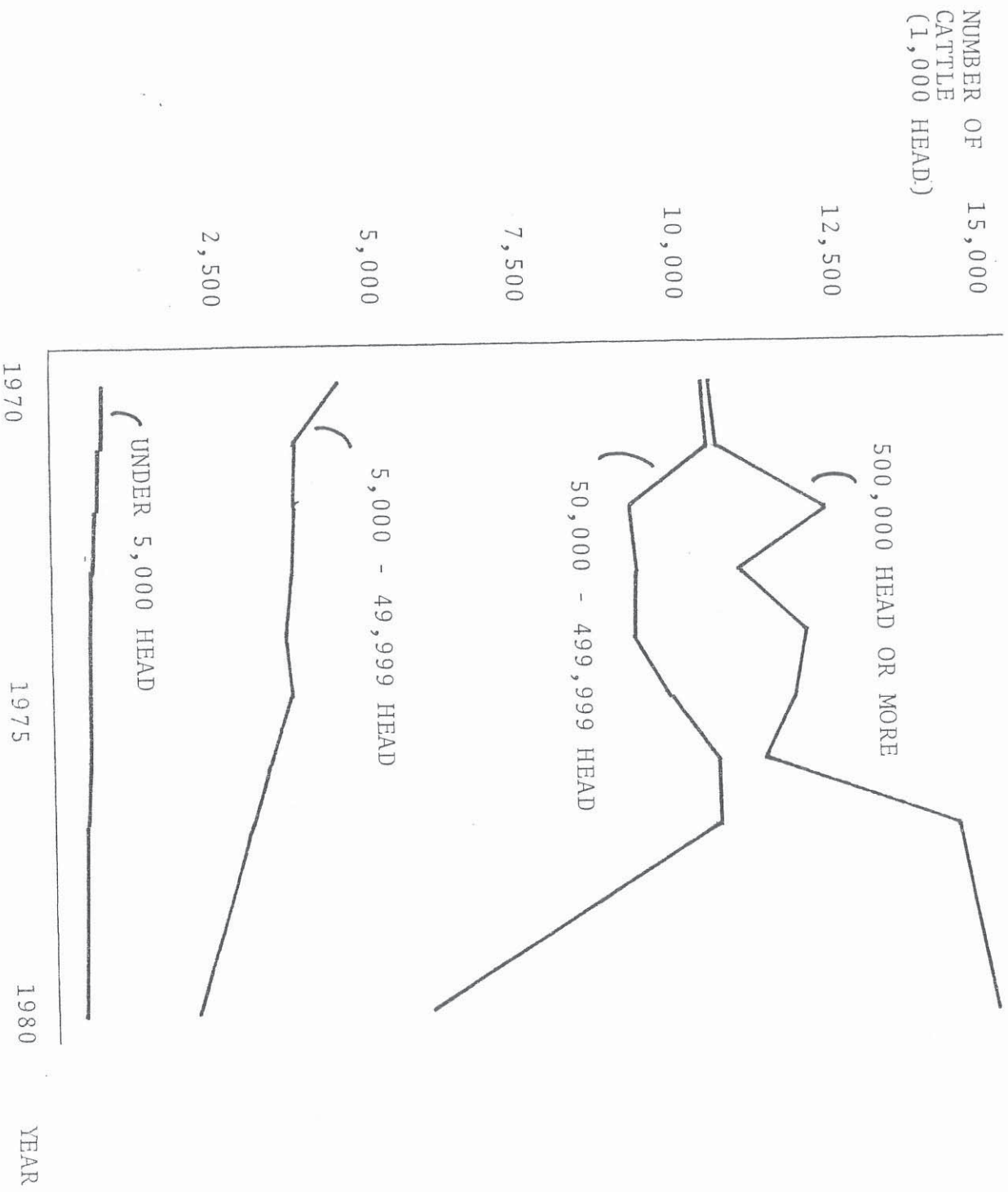
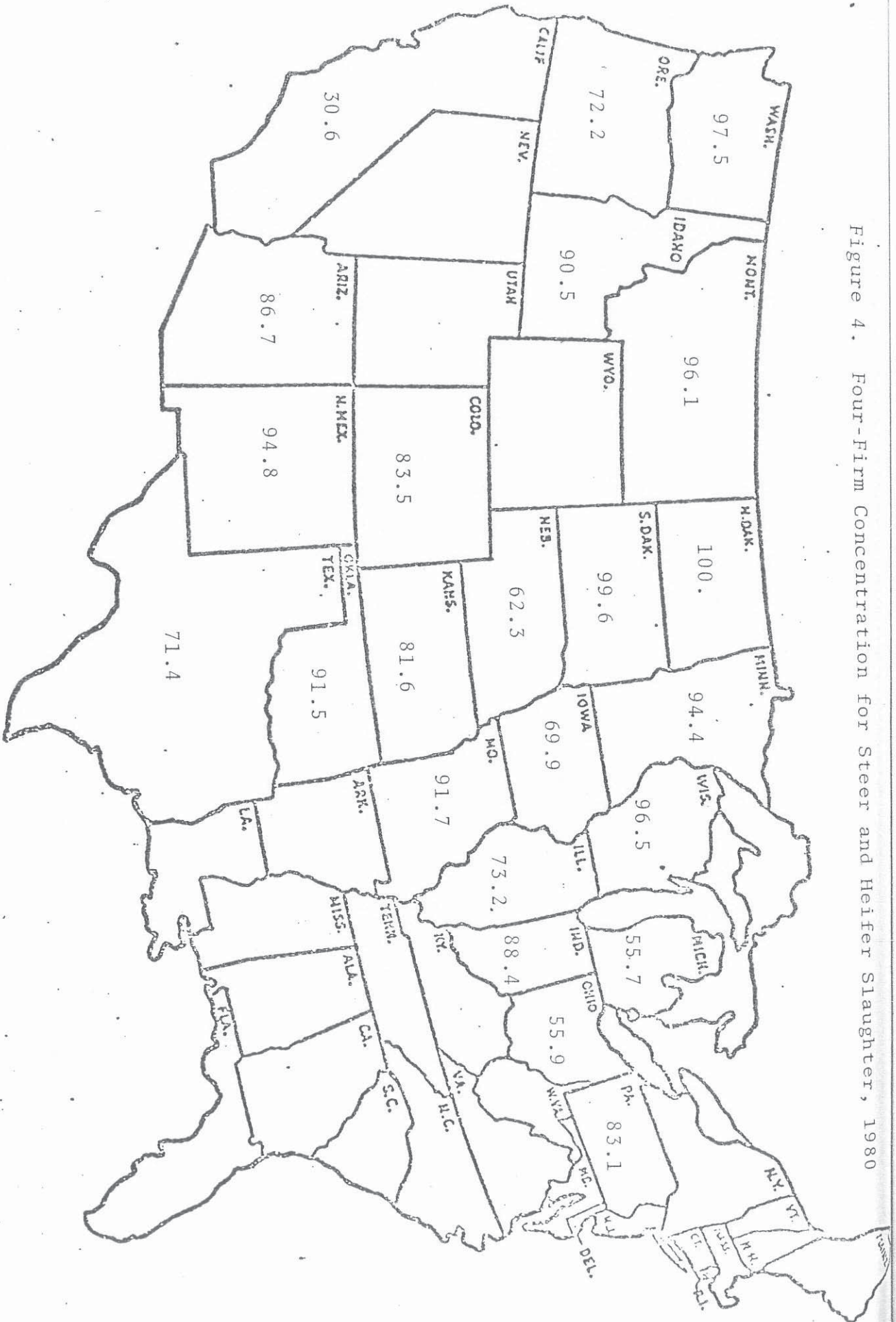


Table 1. Twenty Largest Beefpackers in 1980
and Changes from 1970.

Packer	Rank In		Percentage change in slaughter, 1970 to 1980
	1970	1980	
Iowa Beef Processors	2	1	158
MBPXL	8	2	159
Land O'Lakes (Spencer Foods)	5	3	54
Dubuque Packing	18	4	391
Swift Independent	1	5	-42
John Morrell	7	6	67
Armour	3	7	-34
Sterling Colorado Beef	11	8	84
Monfort of Colorado	13	9	114
National Beef	15	10	73
Union Packing	16	11	61
American Stores	14	12	-16
Litvak Packing	30	13	60
Farmland Foods	25	14	22
Dugdale Packing	20	15	-21
Pepper Packing	19	16	-23
Hi-Plains Dressed Beef	34	17	23
Packerland Packing	17	18	-42
Moyer Packing	NA	19	NA
Federal Meat Co.	46	20	60

Figure 4. Four-Firm Concentration for Steer and Heifer Slaughter, 1980



Research at Oklahoma State University (OSU) found that the four largest packers in twelve localized markets in five states (3 to 23 county areas, each divided into steers and heifers) ranged from 70 to 100 percent. Thus, concentration was above 65 percent in all cases. Note, again, that the four largest buyers varied among market areas.

Market shares can be expected to be higher in smaller, more localized areas. First, there are apt to be fewer buyers competing for cattle. Second, packers close to feedlots have a freight-cost advantage relative to packers located further away, and thus packers buy a larger percentage of their cattle from nearby feedlots. Most feedlots in the OSU study had three to six packers bidding on cattle. Forty percent of the pens of cattle were sold with just one to two bids, but more than half of the pens were sold with three to six bids.

Several developments explain structural changes in beefpacking. Factors leading to fewer and larger packers included (1) technology -- introduction of labor-saving slaughtering and fabricating methods, vacuum packaging and related advances enabling the introduction of boxed beef; and (2) market conditions -- high labor union contracts, expanded consumption of fed beef, and increased availability of slaughter cattle in concentrated areas.

Technological advances enabled large-scale slaughtering and fabricating plants to be built and to operate with lower per unit costs. Lower costs also were made possible through lower nonunion wage rates, or lower wage rates with different unions representing workers in beefpacking plants. Increasing costs of operating slaughtering plants in urban settings, such as for air pollution, and waste water treatment combined with the growth of cattle feeding in the Southern Plains caused a shift in slaughtering capacity to the growth feeding areas. Rapid adoption of boxed beef contributed to structural changes as well because it enabled shipping beef longer distances to urban areas at lower costs. The result was that smaller, higher cost firms left the industry -- leaving behind larger and more efficient packers.

Structural changes in beefpacking naturally resulted in higher market shares for larger packers. Fifteen states slaughtered fewer steers and heifers in 1980 than in 1969. Simply reducing total slaughter increases concentration in most cases. Larger and lower cost firms are in a better position to bid for the smaller number of cattle. Therefore, their volume is reduced less than smaller, higher cost firms and their market share increases. Thus, concentration increases.

Steer and heifer slaughter increased in eight states. Few, new plants requiring large capital investments are

likely to be constructed in states with declining volume of fed cattle either in absolute or relative terms. Thus, new plants are built in growth feeding areas. Newer, larger and lower cost plants have an advantage over higher cost plants in terms of bidding for cattle. They are able to keep their plants operating at a relatively high level. As a result, their slaughter volume increases relative to other packers and their market share increases. Thus, again, concentration increases.

How has the trend toward fewer and larger packers impacted cattlemen today? Several economists have studied structural changes in cattle feeding and beefpacking. However, some studies have fallen short of examining the impacts of those changes on cattlemen.

Economists with the House Committee on Small Business concluded that beefpacker concentration caused 30 percent of the increase in retail beef prices between 1970 and 1978. OSU economists reviewed that study and found it full of errors. A different approach was taken and results showed that packer concentration neither enhanced or depressed cattle prices, wholesale beef prices, or farm-to-carcass marketing margins over the same 1970-78 period.

University of Wyoming economists studied the impact of increasing packer concentration on fed cattle prices for selected states. Fed cattle prices were found to be unaffected by increasing packer concentration.

A U.S. Department of Agriculture economist examined price-cost margins in four feeding regions. He concluded that increased packer concentration did not affect packer margins for fed cattle.

Finally, an OSU study found that market shares of packers neither enhanced or depressed fed cattle prices. Prices differed significantly among packers within localized areas over the one-month period, but differences were not a result of packer size or market shares.

My conclusion is that to date the trend toward fewer and larger packers has generally had little or no impact on fed cattle prices. That does not rule out the possibility that prices may have been affected for short periods of time in certain areas. However, it appears the marketplace adjusts to such situations, so that overall adverse impacts on cattlemen are minimized or eliminated.

There is little indication the trend toward fewer and larger beefpackers will be reversed in the next decade or more. Future growth in larger beefpackers may be slow. However, while number of larger plants may change little, smaller packers will continue leaving the industry. Thus, larger packers will increase their share of total steer and

heifer slaughter and higher concentration will result. Concentration will increase more rapidly if total fed beef marketings continue declining and the entire beef industry shrinks. Whereas, the trend toward higher concentration will be slower if the beef industry expands. The reason for the continued change in beefpacking is simple -- larger, efficient packers can slaughter and process beef for less cost per pound than smaller, less efficient plants.

How will the continued trend toward fewer and larger firms and toward vertical integration impact cattlemen in the future? The concern of cattlemen is easily recognized. Yesterday there were four packers buying in your area. Today there are three. Tomorrow will there be just one? Economic theory suggests that many packers are better than few in terms of providing a more competitive market. However, economic theory is not refined enough to say that seven buyers are better than six, or that six are better than five, etc. It is clear that two are preferred to one. What is not clear is whether two, three, or some small number of packers can compete as vigorously for cattle as ten, twenty, or some large number. Price impacts on cattlemen may not differ, even over an extended period of time, if a few efficient packers compete as effectively as several less efficient packers.

There is a potential conflict. For example, Iowa Beef Processors is presumed to have the lowest per unit slaughtering and processing cost in the beefpacking industry. Potentially, they could buy or out-compete other packers and lower average industry costs further. However, at some point, gains from lower costs may be offset by Iowa Beef's potential ability in the future to control prices paid for cattle.

There are other potential impacts. Do packers that feed cattle, own feedlots or joint venture with feedlots enjoy a competitive advantage with respect to prices paid for fed cattle? What advantages do multiplant packers have over single plant packers? Do large packers receive a price premium for larger volume beef and byproducts sales? What do preferential wage rates and lower processing costs mean for packers in terms of prices they can pay for cattle? Do lower costs mean packers can pay more for cattle, receive less for beef, and squeeze competitors out of business? What are the limits of market power, if market power exists?

These unanswered and difficult questions raise other questions. What business practices are fair? Are less efficient firms driven out of business, or are they unable and unwilling to compete with aggressive, innovative firms? Who is at fault -- laggard management, or aggressive management? How many or how few restrictions should be placed on competing packers by the Federal Government?

Beef Pricing and Price Reporting

The extent of formula pricing carcass beef vs. boxed beef was thought to vary considerably. However, based on Packers and Stockyards Administration studies, the extent of formula pricing carcass and boxed beef is nearly the same. Seventy percent of carlot sales of carcass steers and heifers during July 1977 were priced by formula. In a 1979 survey of 100 beefpackers, 70 percent of boxed beef was formula priced on a per cut or whole carcass unit basis.

There are two potential problems associated with formula pricing a high percentage of carcass and boxed beef. First is whether or not reported prices accurately reflect supply and demand conditions. Second is whether or not reported prices can be manipulated. The importance of accurate reporting is clear. The National Provisioner's yellow sheet prices are used in formula pricing carcass and boxed beef, and are also used as a starting point for pricing fed cattle. Therefore, accurately reported prices are important. If reported prices do not reflect supply and demand conditions, or if prices are manipulated and someone is gaining at another's expense, then we have an inefficient marketing system.

Packers and Stockyards Administration found that one-half of the carcasses priced by private negotiation in July 1977 were special cases and therefore not suitable trades for price reporting purposes. Price reporting services such as the National Provisioner, Meat Sheet, and USDA's Market News may only report prices for one-half of all reportable trades. Thus, reported prices come from about five to ten percent of all carcasses traded. These prices serve as a basis for the 70 percent that are formula priced. Inaccurately reported prices for the five to ten percent of carcasses trades has a large impact on the prices of a large number of other trades.

A House Small Business Committee study found that the National Provisioner's prices were not supported by price reporters' log books in a high percentage of cases. However, Packers and Stockyards found that yellow sheet prices on the average reflected prices logged by the National Provisioner's market reporters. Further, the analysis concluded that on the average yellow sheet prices reflected a sample of negotiated prices. An OSU study compared midday and closing yellow sheet prices for 20 beef and pork items with USDA Market News reports issued at three times daily during July, 1979. The National Provisioner reported prices more frequently for most items. However, the level of reported prices was nearly the same for the National Provisioner as for Market News with a few exceptions.

Firms use formula pricing for economic reasons. Formula pricing can: (1) reduce costs; (2) reduce certain types of risks; and (3) ensure prices received are similar to those received by competing firms. Similarly, there are economic reasons for preferring yellow sheet price reports relative to others. Users can be nearly certain a price will be reported by the National Provisioner. In addition, the National Provisioner's prices have been found to be nearly the same as USDA's reported prices -- whether yellow sheet prices are supported by market reporters' logged-in prices, or are based on reporters' feel of the market.

There are potential problems in formula pricing a high percentage of carcass or boxed beef. However, there is no concrete evidence of a current problem. Continued monitoring of prices is important.

It should be noted that it is very difficult to detect price manipulation. First, it is difficult to identify one or more trades that directly influenced or changed the reported price. Second, it is difficult to prove that the trade was an intentional effort to influence the reported price -- rather than a legitimate trade which inadvertantly influenced the reported price.

Futures Markets

The question of price manipulation refers to the futures market for live cattle as well as the cash market. A House Small Business Committee study indicated that larger traders profited more than smaller traders, and many larger traders were employees or officers of meatpacking companies. A second study found a sure-fire way to forecast a drop in futures prices.

Neither study found anything surprising. The first study found what was expected -- that larger, more knowledgeable, better informed traders were more skilled at managing capital than smaller, less knowledgeable, and less well informed traders. The second question was regarding meat-packer employees trading futures contracts. Nothing prevents employees of public corporations from buying and selling stock in their companies. The same question of having access to and using inside or private information could be raised there. Detecting manipulation in the futures market is difficult, for the same reasons discussed above for cash markets. When did a trade inadvertantly move the market because a trader's information was superior to other traders? When was a trade made to intentionally move the market in the trader's favor?

A second study found that markets adjust when they

begin to get too far out of line. A more thorough reading of the small business committee report found that the sure-fire forecasting method had some high risks involved. It was only 100 percent accurate for part of the period studied. More importantly, the timing of the forecasted price decline was uncertain. In essence, the presumed sure-fire method was not at all a sure-fire method.

There is no clear point at which futures market prices are considered in a packer's process of computing bids. The relationship between today's live cattle futures prices and today's fed cattle prices is unclear. However, there is a clearer relationship between today's live cattle futures prices and future fed cattle prices.

Research at OSU found a relatively high correlation between futures market prices for the nearby contract and live cattle prices. However, correlation does not mean there is a cause and effect relationship.

The observed correlation between live cattle futures prices and fed cattle prices may be due to the way cattle feeders or packers use futures market prices as an indication of trends in cash prices. For example, futures market prices are an indication of prices expected at some future time (contract maturity) by a balance of buyers and sellers based on the information they have today. These prices do not necessarily reflect or forecast what prices will be tomorrow or next week. However, changes in futures market prices for the nearby contract may have a psychological impact on feeders and packers. Either party (buyer or seller) may interpret a drop in the futures market price as an indication of lower cash prices in the future. Therefore, feeders may be willing to sell cattle today for a lower price, and packers may bid lower. Thus, futures market prices affect cash prices only to the extent that futures markets reflect expectations about future cash prices.

Futures markets serve a legitimate purpose. Used properly, they can shift price risk from risk averse traders, to traders willing to assume risks. Used improperly, anyone can make or lose money, but probably most would lose money. To some people, persons who are willing to risk large sums of capital by speculating are immoral or unethical. In fact, those people do a favor to those of us who are risk averse, and want to shift our price risk somewhere else.

CONCLUSIONS

Cattlemen's concerns are legitimate. There are several aspects of our marketing system that are not as well

understood as we would like. Lack of understanding about how markets work breeds suspicion and distrust.

Studies on packer concentration suggest fewer impacts on cattlemen to date than many people might have expected. Yet, the trend toward fewer and larger packers continues and future impacts are uncertain.

Beef pricing and price reporting studies show no concrete evidence of adverse effects on cattlemen to date. However, the potential problem exists and may be increasing if formula pricing increases and number of reported prices decline.

Futures markets have benefited many cattlemen, while harming many others. The major factor in my opinion is how effectively are they used by cattlemen to manage price risk or as information into marketing decisions.

Continued study to improve our understanding of markets, marketing and pricing is needed. Better understanding will reduce our fears -- or identify inefficiencies which need to be addressed.

REFERENCES

1. Ahmaddaud, Zahedi, Dale J. Menkhouse, and J. S. St. Clair. July 1980. "Effect of Feedlot and Packer Concentration on Feeder and Fed Cattle Prices." Invited paper, W. Agr. Econ. Assn. meetings.
2. Committee on Small Business, U.S. House of Representatives. September 1980. An Analysis of the Futures Trading Activity in Live and Feeder Cattle Contracts of Large (Reporting) Traders on the Chicago Mercantile Exchange. Washington: Government Printing Office. Staff study.
3. Committee on Small Business, U.S. House of Representatives. February 1981. "A Report to the Honorable Neal Smith, Member of Congress, on the Systematic Downward Bias in Live Cattle Futures." Staff study.
4. Economic Research Service. Livestock and Meat Statistics. USDA, annual issues.
5. Hayenga, Marvin L. October 1978. Vertical Coordination in the Beef Industry: Packer, Retailer, and HRI Linkages. University of Wisconsin-Madison. NC-117 WP-22.
6. Lamm, McFall R. Jr. September 1981. "Competition in the Domestic Cattle Industry." NED, ERS-USDA.
7. Multop, J. R. and J. W. Helmuth. Relationship Between Structure and Performance in the Steer and Heifer Slaughter Industry. Committee on Small Business, U.S. House of Representatives.
8. Packers and Stockyards Program. December 1978. Beef Pricing Report. AMS-USDA.
9. Packers and Stockyards Program. April 1980. "Concentration in the Meat Packing Industry -- National and Local Procurement Areas." Report presented to U.S. House Committee on Small Business. AMS-USDA.
10. Packers and Stockyards Administration. Packers and Stockyards Resume' -- Statistical Issue. USDA, annual issues.
11. U. S. Department of Agriculture. August 1980. The Report of the USDA Meat Pricing Consultation and Evaluation Group.
12. Ward, Clement E. December 1980. "Comparison of Privately Reported vs. Publicly Reported Wholesale Meat Prices." Oklahoma Current Farm Economics. Oklahoma State University. Vol. 53, No. 4.

13. Ward, Clement E. July 1982. "Relationship Between Fed Cattle Market Shares and Prices Paid by Beefpackers in Localized Markets." West. J. of Agr. Econ.
14. Ward, Clement E. July 1981. "Short-Period Pricing Models for Fed Cattle and Impacts of Wholesale Carcass Beef and live Cattle Futures Market Prices." S. J. Agr. Econ.
15. Ward, Clement E. December 1980. "Structure-Prices and Structure-Margins Relationships in the Beefpacking Industry." Oklahoma State University, Dept. Agr. Econ. A.E. 80125.
16. Ward, Clement E. and J. Bruce Bullock. November 1980. "Relationship Between Structure and Performance in the Steer and Heifer Slaughtering Industry -- Review and Comments." Oklahoma State University, Dept. Agr. Econ. Paper A.E. 80115.