BUYER CONCENTRATION IN THE BEEF SECTOR: ITS IMPACT ON RANGE PRODUCERS

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The range beef industry is directly affected by the buyers of its product: weaned 350-500 pound calves, yearling cattle off hay or grass and cull breeding stock. The industry is also affected by the buyers of finished cattle and dressed beef. I have chosen to address the question of buyer concentration at three levels: (1) the buyers of cattle destined for grain finishing; (2) the slaughterers; and (3) the retail sector. The degree of concentration varies from level to level. The effects of concentration are transferred through the marketing channel and result in the ultimate prices range cattle producers receive.

Concentration in Cattle Feeding

The numbers of cattle marketed from feedlots in the 23 major feeding states increased from 14 million head in the early 1960's to over 26 million head by 1972, then declined to about 20 million head in 1975. These 23 states accounted for an estimated 95 percent of all cattle in the U. S. A. in the 1960's and 70's with major shifts in importance from region to region. Between the early 1960's and mid 1970's, major structural changes have occurred. Small farmer feeders have given way to large commercial feedlots. In 1975 the large feedlots (over 1000 head capacity) represented only 1.3 percent of all feedlots but accounted for 65 percent of all cattle fed during the year compared with .6 percent and 36 percent in 1962 (Table I).

Extended further, 217 lots with capacity of 16,000 head or more marketed almost 7-1/2 million head or 36-1/2 percent of all grain fed cattle marketed in 1975. Those with a capacity of 8,000 head or more marketed approximately half the fed cattle (Table II).

Table I--Number of Cattle Feedlots and Fed Cattle Marketed by Feedlot Size, 23 states, 1962 through 1975

Year	Feedlot Capacity under 1,000 head		Feedlot Capacity 1,000 head or more	
	Number	Cattle marketed	Number	Cattle marketed
		--1,000 Head--		--1,000 Head--
1962	229,365	9,271	1,439	5,289
1963	225,765	10,081	1,498	5,837
1964	217,680	10,675	1,564	6,720
1965	214,733	10,334	1,687	7,588
1966	209,986	10,855	1,824	8,678
1967	204,303	11,418	1,908	9,503
1968[a]	193,903	11,442	1,966	10,950
1969	183,504	11,467	2,023	12,396
1970	174,655	11,234	2,162	13,650
1971	163,032	10,520	2,204	14,769
1972	152,429	10,275	2,107	16,560
1973	144,180	8,941	2,040	16,363
1974	135,810	8,261	1,922	15,023
1975	136,262	7,275	1,764	13,219

[a] Estimated

Source: Statistical Reporting Service, USDA, Cattle On Feed, July 1965 and January 1969-76.

A consequence of the structural shift in the cattle feeding sector is that the flow of cattle into and out of the largest commercial feedlots needs to be nearly continuous for efficient feeding. This results from greater specialization and the need to fully utilize fixed facilities. Also feeding periods have shortened and result in more turnover per feedlot and less need for seasonality in placements. Large feedlots demand feeder cattle in large uniform lots to get maximum utilization of pen space and to reduce handling costs.

Table II--Number of Cattle Feedlots and Fed Cattle Marketed by size of Feedlot Capacity--1975

Feedlot Capacity	No. of Lots	Cattle Markets
Under 1,000 head	136,262	7,275
1,000-1,999	653	813
2,000-3,999	426	953
4,000-7,999	259	1,389
8,000-15,999	209	2,582
16,000-31,999	151	4,266
32,000 and over	66	3,266
TOTAL	138,026	20,494

The number of cattle on feed by regions of the U. S. has also changed markedly over the past two decades. The North Central area (corn belt primarily) marketed 70 to 75 percent of the cattle each year during the late 1950's. By 1976 the North Central region had declined to 54 percent. Major increases occurred in the South Central (18 percent) and Western areas (25 percent) (Table III).

The large commercial feedlots (16,000 head or more) were almost exclusively west of the 100th meridian. Texas had 68; California, 36; and Kansas 33 of the 217 identified.

The increase in large commercial feedlots has been associated with changes in ownership and financing of cattle and feedlots. The glamour and potential profitability of cattle feeding plus the federal income tax advantages attracted many people into the feeding sector during the

Table III--Number of Cattle on Feed by U. S. Regions, January 1, 1976

Region	Number of Head 1,000 Head	Percent of Total
West North Central	5,351	41.4
Western	3,246	25.1
South Central	2,353	17.9
East North Central	1,581	12.3
South Atlantic	319	2.5
North Atlantic	104	.8
U. S.	12,912	100.0

Source: Livestock and Meat Statistics, USDA, Statistical Bulletin No. 522, Supplement for 1975, June 1976.

1960's. Public limited partnerships became popular because of the tax shelter or income deferral advantages offered to high income investors. Many of these tax advantages were reduced by the Income Tax Reform Act of 1976.

The ownership of custom feedlots continues to change as the economies in the industry forces change. The prolonged periods of unprofitable cattle feeding during the mid '70's have caused many limited partnership investors to leave the cattle feeding industry. As a result, many large commercial feedlots have encountered financial difficulties and had to be sold. Large corporations such as feed companies and other multinational corporations and foreign investors have invested funds in feedlots and/or cattle feeding, which could result in vertical integration similar to the poultry industry's.

The change from predominantly farmer feeders to commercial feedlots has caused a major shift in the timing of demand for replacement cattle. Farmer feeders normally filled their lots in the fall, creating a peak demand at the time cattle were coming off summer ranges. The commercial feedlots, with continuous feeding and quicker turnover of cattle, now purchase replacements year-round. Thus, the demand is less seasonal and wintering programs and other systems to hold cattle for delayed marketing have become viable ventures.

The need for pen size lots of uniform cattle to fit into the commercial feedlot programs may cause additional marketing problems for the individual range cattle producers. The demand for an individual operator's cattle may be reduced and effective competitive bidding may not actually occur on less than pen sized lots.

The large commercial feedlots have become more price conscious following the unprofitable period during the mid 1970's. The management will project fed cattle prices and costs of gains and then attempt to buy feeder cattle at prices that offer potential profits. In the late 1960's and early 1970's, feeder prices were not under as much pressure as costs of gains were well below the selling price of fed cattle. In the past four years, costs of gain have been greater than the fed cattle price, thereby causing severe downward pressure on feeder prices. The Income Tax Reform Act of 1976 has also caused feedlot operators to be more concerned with the relationship of costs (both of feeders and gains) to selling prices of fed cattle.

Concentration in Cattle Slaughtering at National Level

The meat packing industry of 1920, the year of the consent decree with the major packers, was moderately oligopolistic within the national cattle market. The "Big Four" meat packers (Armour, Cudahy, Swift & Wilson) accounted for 49 percent of the cattle slaughter in the United States.[1] Since 1920 the structure of the meat packing industry has become more dispersed nationally. Increasingly, members of the "Big Four" have been displaced in the ranking by other firms.

Concentration in cattle slaughter declined--beginning in the 1930's and by 1950 the four firm concentration ratios had dropped to 36 percent. During the 1950's the decline was accelerated as decisions were made to scrap or remodel old and outmoded slaughter plants, to discontinue slaughter of certain species, to emphasize processing over slaughter in overall operations and to diversify into other industries. The "Big Four" had dropped to less than 25 percent of the cattle slaughter by 1959. Their proportion continued to decline to 19 percent by 1975 due largely to major slaughter capacity cutbacks by one of the leading packers. Minor concentration is present among the firms ranking 5 through 30 in cattle slaughter but is greater in other species (Table IV).

Concentration in cattle slaughtering is not as much a problem at the national level currently. Cattle and calf slaughter--with the four firm level at less than 1/5 and at the eight firm level at less than 30 percent--is relatively dispersed.

Rivalry is intense in the cattle slaughtering industry. It results in what may be termed "workable or effective competition". Market power of the major packers is held in check quite effectively by the ease of entry by

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[1] Aspelin, Arnold & Gerald Engelman, "National Oligopoly & Local Oligopsony in the Meat Packing Industry". Packer & Stockyards Administration U. S. D. A. Washington D.C.

Table IV--Concentration of Livestock Slaughter, 1975

Species	Percent of commercial slaughter by firms ranking: 1-4	1-8	1-12	1-20	1-30
Cattle	19	29	36	44	49
Calves	24	34	42	52	60
Hogs	33	50	58	68	78
Sheep	57	75	85	93	96

Source: Packer & Stockyards Administration U. S. D. A. Washington D.C.

horizontal competitors dealing in "public franchise" commodities, such as U. S. D. A. Choice Beef and by the mass purchasing power of the retail food chains. A study in the middle sixties concluded that profit margins in meat packing do not indicate excessive market power.[2]

State & Regional Concentration in Cattle Slaughtering

National concentration ratios do not reflect the market power of the packers in the procurement market for slaughter cattle from livestock producers. The relevant market for slaughter cattle is generally much more localized. The market for slaughter cattle is quite circumscribed inasmuch as most cattle are sold out of first hands by the producer to a packer or other buyer located within a 100 mile radius. Shipping live animals out of the local market area in search of higher prices is costly because of trucking costs involved, and losses due to shrink, injury and bruising.

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[2] National Commission on Food Marketing, Organizations and Competition in the Livestock & Meat Packing Industry, June 1966, pg. 59-69.

The meat packing industry tends to be highly oligopsonistic (few buyers) at the state level. The four ranking firms accounted for 2/3 or more of the steers and heifers slaughtered in all but 4 states of the 22 states west of the Mississippi River in 1975. (Iowa 57 percent, Nebraska 57 percent, Texas 59 percent, and California 20 percent). An even greater concentration occurred in the slaughter of cows and bulls (Table V).

The significance of concentration in livestock procurement may also be growing due to increased geographical dispersion among plants. Rational decision making on plant location calls for construction of new plants away from established plants and closer to livestock production areas. This has been the general pattern of decentralization for more than 25 years.

According to economic theory, it is axiomatic that the behavior of leading individual firms or groups of firms can influence prices in oligopolistic (oligopsonistic) markets. It is commonly observed in the livestock industry that prices in individual markets can vary measurably from this "normal" relationship with prices elsewhere. This happens even though market prices are widely reported and market participants are "free" to make corrective actions; to sell in a market or buy at a distance. Such deviations from the "normal" or equilibrium price relationships may be due to the supply and demand forces in a highly competitive market but they may also be due to the action of oligopsonistic buyers due to imperfect market information on the part of the sellers.

Evidence gathered, before the inception of the telephone auction system for selling lamb in the Northwest, indicated a highly differentiated market existed. Lamb selling at local markets in South Idaho and Eastern Oregon were selling for $5 to $7 below lamb at the major lamb markets of Denver, Distribution of U.S. livestock slaughter by state and region, number of major slaughter plant outlets and percent of slaughter by the four ranking firms in state, region, and U.S., by species, 1975

Table V

State and Region	Steers and heifers: Percent of U.S.	Steers and heifers: No. of major plants	Steers and heifers: Percent by four firms	Cows and bulls: Percent of U.S.	Cows and bulls: No. of major plants	Cows and bulls: Percent by four firms
Minnesota	3.3	6	76.9	5.2	8	67.9
Iowa	13.5	20	56.8	8.4	11	76.4
Missouri	2.9	6	75.9	2.1	6	65.3
North Dakota	0.5	1	100.0	1.3	2	100.0
South Dakota	1.1	4	95.9	4.2	5	92.1
Nebraska	16.2	24	56.7	6.0	14	57.3
Kansas	8.9	13	77.0	3.0	8	76.8
West North Central	46.4	74	42.3	30.2	54	28.7
Arkansas	0.3	2	83.1	1.8	3	88.3
Louisiana	0.4	2	96.7	0.7	3	87.0
South Central	3.2	16	43.8	10.1	26	41.4
Oklahoma	1.7	5	82.3	2.0	5	78.4
Texas	10.9	36	59.3	12.7	29	41.0
Southern Plains	12.6	41	55.4	14.7	34	35.5
Montana	0.1	1	94.7	0.7	1	100.0*
Idaho	0.5	2	76.3	1.5	3	92.5
Wyoming	(0.1)	0	100.0	0.1	0	100.0*
Colorado	7.5	10	65.7	1.2	4	74.6
New Mexico	1.5	2	97.9	1.3	3	90.2
Arizona	1.7	4	86.7	0.2	1	81.0
Utah	0.5	1	79.7	1.0	2	80.6
Nevada	(0.1)	0	100.0	(0.1)	0	100.0*
Mountain	11.9	20	48.9	5.9	14	42.3
Washington	1.3	5	88.9	1.5	3	70.9
Oregon	0.4	1	81.0	0.8	4	84.3
California	8.1	37	20.1	5.7	24	36.1
Pacific	9.8	43	18.2	8.0	31	29.6
United States	100.0	246	27.9	100.0	225	13.2

*Less than four firms included in percentage. (0.1) denotes value less than 0.05 percent.

Note: Percentages based upon livestock purchases for slaughter, by state where slaughtered, excluding firms reporting less than 1,000 head of cattle or 2,000 head of all species. Slaughter plants were considered major outlets if minimum purchases were 10,000 steers and heifers, or cows and bulls.

Source: Packer & Stockyards Administration U. S. D. A. Washington D. C.

San Angelo, and Dixon, and at a similar discount to the national dressed lamb market. Many lots of lamb were exposed to only one to two buyers. This was clearly an oligopsonistic market in operation.

Fed-cattle prices may at times actually be above the price at which the return from the carcass meat and offal items will cover the cost of the live animal, the labor to slaughter, the power and water costs for slaughter, the power and water costs for slaughtering and chilling, the costs of management and capital invested. Cattle slaughtering firms will continue to buy and slaughter cattle in times of reduced cattle movement, when the variable costs are covered by the sale of the carcass plus the offal and a contribution to fixed costs remain. Cattle slaughterers find themselves in the position of covering only variable costs when plants have a greater capacity to slaughter than the supply warrants. Competitive bidding for live cattle will force the live price out of relationship to the wholesale carcass price to the benefit of cattle producers.

Concentration at the Retail Level

United States consumers spent about $148 billion for foods produced on U. S. farms in 1974. Payments to U. S. farmers accounted for 38 percent of the total; the remaining 62 percent went to the various intermediary marketing agencies involved in moving food from the farmer to the consumer. Food processors have historically accounted for the largest portion of the "marketing bill". However, their share has declined markedly during recent years while the shares going to food retailers, wholesalers and eating establishments have expanded. Between 1958 and 1974, the share taken by food retailers expanded by one-fourth during the period to 29 percent. During the 17 year period, modest increases also occurred in the food wholesalers' and eating places' share of the marketing bill. Thus for whatever reasons, packaging, self-service, etc., those agencies most closely linked with the consumer have accounted for a steadily increasing portion of the marketing bill for the U.S. farm products.

The supermarket which combined self-service, cash and carry, and a broad selection of products under one roof revolutionized the U. S. food retailing industry and provided the impetus for fewer but larger retail food stores. During the period, 1960-74, the number of grocery stores declined by one-fourth and in 1974, supermarkets made nearly 72 percent of all grocery store sales. (A supermarket is defined as any grocery store, chain or independent, with an annual volume of $1 million or more).

Retail grocery chains have grown in relative importance since they became commonplace in the 1930's. Between 1948 and 1972 the chain's share of grocery store sales rose from 34 percent to 57 percent. (A retail grocery chain is defined as 11 or more retail grocery stores operated under one ownership). Large chains (operators of more than 100 stores) accounted for approximately 40 percent of grocery store sales in 1972.

The share of U. S. grocery store sales held by the largest 4, 8, and 20 chains from 1948 to 1975 as shown in Table VI. One of the most dramatic changes was A & P's decline from 11.3 percent of the nation's grocery sales in 1954 to 4.9 percent in 1975. The 20 largest chains increased their market share from 27 to 37 percent; without A & P, the other 19 largest chains grew from 16 to 32 percent of U. S. grocery sales.

Nearly all large chains have performed the wholesaling functions for their own stores foryears. Some chains have also integrated into food processing. However available evidence suggests no strong overall trend toward either further integration or disintegration by food chains.

Table VI--Market Share of the 20 Largest Grocery Chains, Census Years, 1948-75

(In percent)

Rank of chains	Share of grocery store sales in--				
	1948	1954	1958	1967	1975
A & P	10.7	11.3	11.1	8.3	4.9
1st to 4th	20.1	20.9	21.7	19.0	17.9
5th to 8th	3.6	4.5	5.8	6.7	7.6
1st to 8th	23.7	25.4	27.5	25.7	25.5
9th to 20th	3.2	4.5	6.6	8.7	11.5
1st to 20th	26.9	29.9	34.1	34.4	37.0
Top 20 excluding A & P	16.2	18.7	23.0	26.1	32.1

Source: The Profit and Price Performance of Leading Food Chains 1970-1974. A study prepared for use of the Joint Economic Committee Congress of the U. S., April 12, 1977.

Industrial organization theory holds that the structure of a market has an important influence on the business conduct of firms in that market and in turn on market performance. Two of the market structure elements that are considered of particular importance are the number and size distribution of firms in the market (as measured by market concentration and relative firm size). Empirical studies in various industries provide compelling evidence concerning the effect of market concentration on the pricing policies and profits of firms in a market.

In relating firm prices and profits to a firm market share and four firm concentration ratio, a positive and significant relation exists between firm profits in a market. Its market share may be due to higher prices, lower costs or both. Costs in food retailing are particularly susceptible to variations in utilization of store facilities.

A study found that a 20 percent increase in sales per square foot of selling space reduced store operating costs per dollar of sales by 6 percent.[3]

The same study found that firms with high market shares generally realized higher sales per square foot and hence lower store costs.[4]

Not only do the 20 largest grocery chains have a concentration of market power on the selling side (an oligopolistic situation) but they also exhibit similar power on the buying side. The National Commission on Food Marketing expressed concern about concentration in procurement in 1966 when it stated:

> "Concentration of purchasing power by food retailers is especially significant. The increasing market orientation of the food industry and changes in the organization of buying have transferred market power from processors and manufacturers to retailers. Prospective developments in the industry are likely to further enhance their position. Increasing concentration of purchases restricts the alternatives open to suppliers, stimulates compensating concentration on their part and weakens the effectiveness of competition as a self-regulaing device throughout the industry.[5]

Evidence of continued growth in concentration indicates the concern of the commission expressed in 1966 was warranted.

Meat packing firms tend to face stronger market power from the retail chains as buyers than they can muster as sellers of dressed beef. Retailers are in a position to feature and advertise beef or refrain from doing so. They are also in a position to adjust the mark-up from the packer through

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[3] National Commission on Food Marketing, "Organization and Competition in Food Retailing". Technical Study No. 7, June 1966, pg. 149.

[4] Ibid, pg. 181-183

[5] Food From Farmer to Consumer, Summary Report of the National Commission on Food Marketing, U.S. Government Printing Office, Washington D.C., June 1966, pg. 106.

Table VII--Average Annual Beef Retail Prices & Carcass--Retail Spread

Year	Retail Price Cents/Lb.	C-R Spread Cents/Lb.	%CR/RP
1964	76.5	23.2	41.8
1965	80.1	22.1	27.6
1966	82.4	23.9	29.0
1967	82.6	23.2	28.0
1968	86.6	23.5	27.1
1969	96.2	27.5	28.6
1970	98.6	30.3	30.7
1971	104.3	28.6	27.6
1972	113.8	32.7	29.6
1973	135.5	37.4	27.6
1974	138.8	41.4	29.8
1975	129.6	40.5	31.3
1976	142.1	50.3	35.4

Source: Marketing & Transportation Situation, May 1975, and Agricultural Outlook, May 1977. Economic Research Service U.S.D.A.

the wholesaling and retailing function to the consumer. With these controls they can affect the demand for beef at the consumer level and prices of dressed beef from the packer (see Table VII).

The concentration of market power in the beef industry in the hands of the retail chains can have a decided effect on the prices of both live fed and feeder cattle to the cattle feeder and cow-calf producer.

Summary: Some Structural Changes and Their Impacts

The continued growth in the importance of commercial feedlots, with the need for replacement cattle year-round, offers an opportunity for range cattle producers. The commercial feedlots demand cattle at weights above those of 350 to 450 pound calves. The growing and pre-fattening stage in the beef production cycle was carried on by the farmer-feeder or by yearling grassing operations in the past. Growing programs with ranchers retaining ownership through the wintering stage offer the possibilities of additional profit.

Range producers who are upgrading their cattle and are producing thrifty efficient calves can reap the benefits of improved genetic qualities through retained ownership.

The decentralization of the packing industry has brought outside capital into the food sector. Conglomerate and labor union funds are being invested, replacing the "old line" packing firms. These investors will be more prone to evaluate individual slaughtering plant operations strictly on the basis of profit and losses. By contrast, full line packing firms considered a slaughter operation's contribution to its total meat packing function. Unprofitable or borderline slaughtering plants may be closed or disposed of more readily by these outside investors.

Modern one-specie slaughtering plants built since 1960 have been developed for a year-round labor efficient operation. The packing plants built prior to 1910 were built for peak periods of livestock availability and the use of a cheap short term labor force. Very few beef slaughtering or packing plants were built from 1910 to 1960. A continuous supply of cattle at a level to maintain near capacity slaughter is essential to attracting and keeping a cattle slaughtering plant in an area. It also reflects demand which requires supplies on a steady basis throughout the year.

The necessity of near capacity slaughtering for a local plant may be beneficial to local suppliers during times of reduced slaughter cattle availability. The local plant may actually bid away its profits and even some of the fixed expenses in prices paid for live cattle, in order to maintain numbers. Cattle may be purchased at prices above that warranted by dressed beef prices for short periods of time.

Likewise local plants may be bidding below the dress meat equivalent price during periods of flush cattle supplies. When the plant is killing at capacity, there is little incentive to bid the maximum profitable price for an individual lot of cattle.

Concentration at the retail level is and should be of concern to both the producers of cattle and the consumers of beef. Several federal commissions are focusing their attention on the performance of the retail food industry. Legislation to change the structure (reduce the concentration) is being considered.

A number of suits have been brought against chain store organizations by beef producers. These suits may cause changes in retailers beef buying and selling practices. But will the changes be beneficial to beef producers? Beef producers must depend upon supermarkets as the final selling agent for their products or must develop new retail markets themselves. Retailers may decide to reduce their efforts to move beef through specials and advertising. They and the packers have been the primary promoters of beef to the general consuming public. Are the beef producers ready and able to perform the retailing function and to promote their product to the consuming public?

Is this what the Beef Promotion referendum is supposed to do?? No, the referendum is aimed at shifiting the public toward consumption of beef in preference to other meats and foods.