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BOXED BEEF IN THE MEAT MARKETING SYSTEM

A Summary Appraisal

By

Lana Hall

Maurine MacBride

Department of Agricultural Economics
Cornell University Agricultural Experiment Station
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, New York 14853

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Boxed Beef in the Meat Marketing System - A Summary Appraisal

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Lana Hall and Maurine MacBride

Lana Hall is an Assistant Professor in the Department of Agricultural Economics and Maurine MacBride is a graduate student in the Institute of Food Science/Department of Animal Science.

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BOXED BEEF IN THE MEAT MARKETING SYSTEM - A SUMMARY APPRAISAL

Safeway first developed the concept of boxed beef in 1960 for use in their central cutting program. Since 1966, Iowa Beef Processors, Inc. (IBP) has become the leading producer and promoter of boxed beef, and there has been a steady increase in the use of boxed beef. Despite initial resistence from meat cutters' unions and from retail chains that have large investments in central cutting facilities, there has been an increasing acceptance and use of boxed beef in retail outlets. In 1975, a "Chain Store Age" survey of 1,900 supermarkets found that 80% still used carcass meat (19). Only 22.2% used a total boxed beef program and 37% used a mixture of boxed beef and carcass cutting. A total carcass cutting system was still used by 40.8% of the surveyed stores.

In 1977, Cryovac commissioned a survey of supermarket executives to determine how widely boxed beef was used in retail stores (25). The executives represented large retail stores, small chains and independent chains. Some of the chains had central beef fabrication facilities while others did not. The survey showed that 57% of the total U.S. beef receipts (except for ground beef) were received as primals. 34% was received as vacuum packaged primals, i.e. as boxed beef. (The large chains reported that 71% of their beef was received in the primal/subprimal form while independent retailers reported that 30% of their beef was received in the primal/subprimal form.) In general, the smaller chains were slower to accept boxed beef. The survey showed that 17% of all fresh beef received at retail was boxed and boneless vacuum packaged beef. About 7 to 10% of the boneless boxed beef was sold directly to customers in the vacuum package and then cut and rewrapped at the time of purchase. Appendix A, Tables 1-9, summarizes the survey findings.

In 1979, the "National Provisioner" (30) estimated that 50-60% of all wholesale beef was traded in the form of boxed beef. The large increase in the production and the acceptance of boxed beef has raised concern that the meat marketing system has been altered by the introduction of this new production and marketing concept and that competitive imbalances have been created.

Of the top 100 firms in the meat packing industry, ranked by sales and dollar volume, thirteen of the top fifteen firms have boxed beef operations (12). Of these, IBP accounted for 39.4% of the boxed beef production in 1976. IBP's sales are shown as a percent of the meat industry's boxed beef sales in Table 1. Since 1977, IBP has been the most profitable meat packing firm in terms of return on equity, return on total capital and earnings--share ratio (5). In 1976, IBP slaughtered 3,516,140 steers and heifers at seven plants. (Table 2). This was 12.4% of the total federally inspected beef slaughter and more than the combined steer and heifer slaughters of Swift (2,118,000) and Armour (1,151,000). Table 3. Also in 1976, IBP had 3,883,000 carcass equivalents of boxed beef sales which were greater than the combined sales of the next three largest boxed beef competitiors (Table 4).

TABLE 1

IBP Boxed Beef Sales as % of Industry Boxed Beef Sales and Industry Boxed Beef Sales as % of F.I. Steer and Heifer Slaughter in U.S., 1971-1976

Year	Boxed Beef Sales (carcass equivalents (x 1,000 head) IBP	Industry	IBP as % of Industry[a] (1) ÷ (2)	F.I. Steer and Heifer Slaughter United States (x 1,000 head)	% Boxed Beef (2) ÷ (4)
	(1)	(2)	(3)	(4)	(5)
1971	1,183	3,043	38.9	25,232[b]	12.1
1972	1,667	4,026	41.4	26,284[b]	15.3
1973	1,817	5,036	36.1	24,249	20.8
1974	1,879	5,850	32.1	25,784	22.7
1975	2,826	7,057	40.0	25,490	27.7
1976	3,883	9,857	39.4	28,382	34.7

[a] Includes large beef slaughterer-processors but excludes non-slaughtering firms that may process carcass beef.

[b] 48 states

Source: (27)

TABLE 2

Iowa Beef Processors, Inc., Steer and Heifer Slaughter by Plant, 1976

Slaughter Plants	Number of Head
Denison, LA	406,255
Fort Dodge, LA	208,837
Luberne, MN	197,777
West Point, NB	459,047
Slaughter and Processing Plants	
Amarillo, TX	738,424
Dakota City, NB	711,527
Emporia, KS	794,273
TOTAL	3,516,140

Source: (27)

TABLE 3

Largest Three Beef Slaughterers, 1976

Company	Steer and Heifer Slaughter (x 1,000 head)
Iowa Beef Processors, Inc.	3,516
Swift & Company	2,118
Armour and Company	1,151
SUBTOTAL	3,269

Source: (27)

TABLE 4

Largest Four Boxed Beef Manufacturers, 1976

Company	Volume of Boxed Beef (x 1,000 Carcass equivalents)
Iowa Beef Processors, Inc.	3,883
MBPXL Corp.	1,453
Monfort of Colorado, Inc.	579
Spencer Foods Corp.	430
SUBTOTAL	2,462

Source: (27)

Thus after pioneering the boxed beef concept, IBP has become the dominant force in boxed beef production. To evaluate the impact boxed beef production in the beef marketing system and the role of IBP it is necessary to examine the structure of livestock procurement and feeding and the wholesale-retail beef market structure. Before doing so, however, an understanding of the boxed beef production process is helpful.

Boxed Beef Production

The boxed beef process can be summarized as a factory-like disassembly of a beef carcass into subunits (subprimals or primals) that can be packaged in vacuum bags and then boxed. Such a systematic assembly-line breakdown improves the efficiency of the meat marketing system by combining slaughter, carcass breaking and boning at a location near the livestock supply. As most animal production is separated from the major consuming areas and meat products must be transported over long distances to reach the ultimate consumer, (approximately 20% of the total beef production is east of the Missouri while 70% of the total beef consumption is east of the Missouri), the recent packaging innovation of vacuum bagged boxed beef has quickened and improved the perishable meat distribution process. A more totally usable product can now be shipped to the areas of consumption.

In more detail, the procedure for producing boxed beef starts with a chilled side of beef. The beef carcass is first prepared for cutting in a prefab area where some initial trimming and preliminary cuts are made. Then the carcass moves into the fabrication room along the fabrication line. The side moves on an overhead rail past workers who each have assigned cuts to make or portions to remove from the carcass. These portions drop to conveyor belts that feed cutting tables where workers are stationed. Each worker has a separate function to perform and the desired meat cuts are produced by removing certain bones and trimming off the various carcass sections.

Meat cuts move from the boning tables to an area where they are put in cryovac bags, vacuum selaed and boxed. The boxes are stored in cold storage. The fat and trim from the boning tables are collected on conveyors that pass through the cutting area. Bones are also collected and conveyed to tables for further trimming. All the meat trim is collected, packed and frozen for ultimate sale to sausage manufacturers. Fat is sold for rendering.

Each carcass will yield approximately 7.2 boxes that weight 90 to 95 pounds each. More than 250 products result from this type of boxed beef or beef fabrication operation. Since a variety of cutting methods can be used, there are no rigid product specifications. In general, most boxed beef operations utilize only higher yield grade carcasses (quality yield grades 1, 2, or 3) to obtain a better yield or cuttability and to produce less trim loss than would be caused by excessive fat on a carcass.

Advantages of Boxed Beef to Meat Packers

There are many advantages to a boxed beef production system. Since the product is vacuum packed, it won't spoil as rapidly and can be held in cold storage for 26 to 28 days instead of the usual 3 to 7 day holding period for carcasses. Because of the longer holding period, boxed beef can be shipped farther so a meat packer's marketing area is expanded. Many of the costs and labor involved in selling, transporting and retailing whole carcasses are reduced. Less waste, fat and bone are shipped and the boxes fit more compactly into the truck space than carcasses.

The vacuum-packaged primal and subprimal cuts will not undergo as much shrinkage during transportation and storage. While shrinkage for vacuum packed primals was reported to be 0.2%, carcass beef had shrinkage of 0.42% per day. (3) Less surface spoilage occurs due to the protective packaging.

A further advantage is associated with by-product disposal. Much of a slaughter plant's profit is derived from the dispoal of by-products such as tallow, hides, variety meats, etc. Fabrication plants operating at a high volume will generate a lot of by-products and also excess bone and fat. Since the bone and fat are obtained at a central plant that is federally inspected, there is a higher resale value than if these by-products had been generated at dispersed retail outlets.

The costs associated with the fabrication of boxed beef are those for equipment, labor and packaging materials. An estimated cost of packaging materials for a carcass (bone shields, cryovac bags and boxes) ranged from $11.20 to $15.08 among 11 boxed beef plants. (28) The cost variation resulted from differences in cutting methods and bagging procedures. On a per pound basis, labor and packaging material for boxed beef was five to seven cents per pound.

Retail Advantages of Boxed Beef

At the retail level also there are advantages to the use of boxed beef. Since the meat is wrapped and boxed, it can be stored in regular warehousing facilities and shipped with other perishable goods. Less labor is required for preparing retail cuts from the primals or subprimals. The retailer also has more versatility in purchasing and a mix of primal cuts that more nearly matches the retail demand can be obtained.

In 1978, Case and Co. updated a previous 1975 study that compared the cost of various beef purchasing systems. (3) For comparison purposes, an 80 store retail chain was assumed to be distant from the packer and moving 1,200 cattle per week along with enough supplemental beef to sell 44% of the beef as ground beef. Such a chain would be selling 842,000 retail pounds of beef per week at an annual retail value of 51.5 million dollars and a purchase cost of 38.5 million dollars.

Costs were compared for using warehoused boxed beef, direct store delivered boxed beef, direct delivered carcass beef and central cutting of retail cuts from carcass beef. Warehoused boxed beef was the best alternative for retailers that have cutting facilities at the stores and must provide customer service.

Higher labor costs for central cutting and the additional costs of transportation were the main reasons for the cost savings with boxed beef.

The cost savings were estimated to be $500,000 to $600,000. For the same volume of beef sales, the profit for each system as a percentage of retail sales was estimated as: 4.4% with central cutting; 4.4% with warehoused boxed beef; 2.9% with direct delivered boxed beef; and 1.6% with direct delivered carcass beef. (3)

A carcass mix savings and a thin meats savings were sources of potential savings with the use of boxed beef. The carcass mix savings is related to the cost involved in merchandising and utilizing the slower moving cuts from the carcass. The Case and Co. study estimated a $760,219 cost per year for losses from trimming, rewrapping, redisplay and scrapping the less desired cuts. If the chain used boxed beef, a mix of primals and subprimals that more nearly fits merchandising needs could be purchased.

The thin meats mix disadvantage was associated with using carcasses at the retail level. During fabrication of boxed beef, the packer removes the thin meats (brisket, shank meat, skirts, flank, kidney, hanging tender and short ribs). Retailers using carcasses must utilize these thin meats and often sell them in the form of ground beef. However, it is more expensive to use thin meats for ground beef than using trim and bull meat. The study estimated a cost of $238,680 per year for using thin meats from a direct delivered carcass beef system.

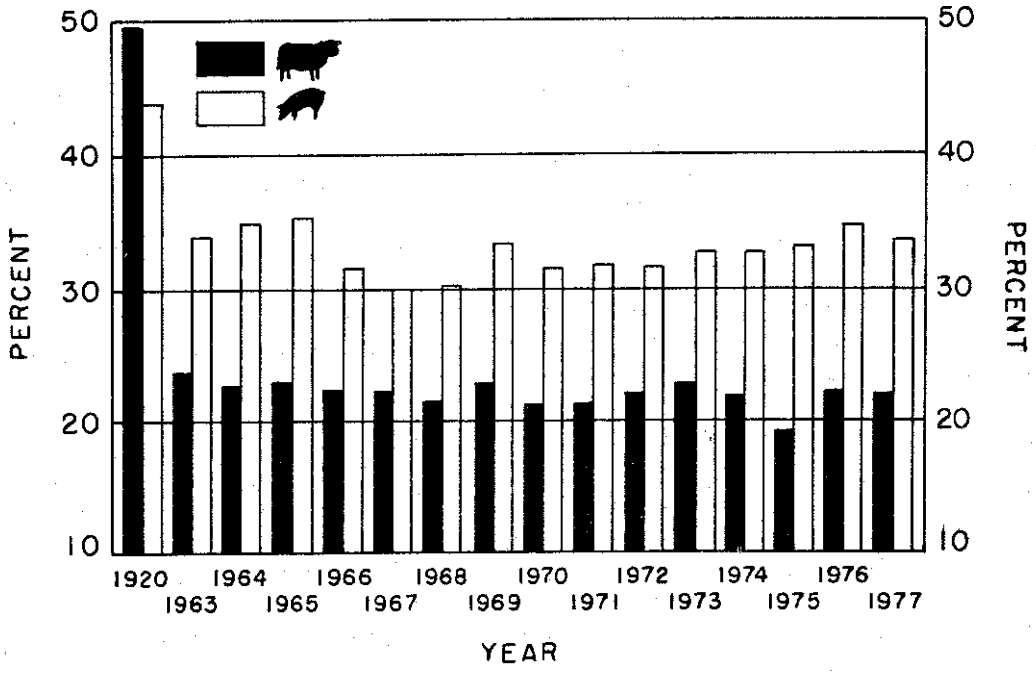
The high cost of transportation raised the cost of both direct delivery of carcasses or boxed beef. However, the transportation costs for carcass beef are inflated by the extra cost and weight of rails and hooks used in hanging the carcasses, the inability to pack carcasses as densely and the extra 40 pounds of fat and bone shipped per carcass.

Meat Packing Industry Structure

To evaluate boxed beef's impact on the structure of the meat packing industry, it is useful to understand how the present structure evolved. At the time of the 1920 P and S Consent Decree, the meat packing industry was both centralized and highly concentrated. The top five firms slaughtered 49% of the total national livestock slaughter. The slaughter occurred at plants that were located near the terminal markets where livestock was shipped and sold.

As transportation methods and refrigeration systems improved, there was a shift in slaughter so it was closer to the livestock production areas. Carcasses were then transported to the consumption areas. Thus the meat packing industry dispersed and became decentralized and much less concentrated. In 1960 the top four firms slaughtered 23 to 24% of the national total and in 1977 the top four firms slaughtered 21 to 22% of the total. (See Figure 1.)

FIGURE I. TOP 4 PACKERS SHARE OF COMMERCIAL SLAUGHTER



Source: (32)

The next development in the structure of the meat packing industry occurred when the large commercial feedlots began producing extremely large volumes of cattle on a nearly continual basis. Slaughter facilities expanded in the new feeding areas to provide slaughter capacity for the large cattle production. A "new generation" of slaughter plants evolved and had extremely large capacities. Thus slaughter plants grew in size but remained decentralized in location. However, there was a trend toward centralized control of a number of decentralized slaughter plants.

On a national basis, the top meat packing firms do not appear to be excessively concentrated in beef slaughtering. However, it is the regional pattern of concentration which is important because livestock producers can only sell in an area of approximately 200 miles and usually sell to packers that are within 75 miles of the farm or feedlot (20).

Regional Meat Packing Concentration

The meat packing industry is more concentrated at the state level than at the national level. In 40 states in 1976, there were only 12 cases when the four firm slaughter share ratio was less than 65% of the steer and heifer slaughter (39). The following regions have a high concentration of slaughter plants which seems to be a result of the establishment of the new large-scale plants: Northwest Iowa-Eastern Nebraska, Colorado, Kansas, Texas-Oklahoma Panhandle. In the Northwest in 1978, IBP slaughtered 432,000 steers and heifers or 44% of the region's total steer and heifer slaughter (10). In that same year, in Northeast Kansas, Western Oklahoma and Missouri, IBP and MBPXL together slaughtered 59% of the region's total and IBP, MBPXL and Swift accounted for 70% of the total slaughter in the Texax/Oklahoma panhandles, Clovis, New Mexico and Southwestern Kansas (11).

As far as fed cattle slaughter is concerned, in the 25 largest fed cattle slaughtering states which account for 96% of the total fed cattle slaughter, the top four firms had a weighted average market share of 64% in 1973 (20). The four largest firms accounted for more than 50% of the total slaughter in Texas and Nebraska. In Iowa, Kansas, Colorado, Illinois, Minnesota and Missouri, more than 65% of the fed cattle slaughter for 1973 was done by the top four packing firms. In Indiana, Wisconsin, South Dakota, Oklahoma, Arizona and Washington, the four largest firms slaughtered 80% of the total (20).

Major Boxed Beef Producers

All the major packers have adopted some form of boxed beef production, with IBP being the largest boxed beef producer. IBP operates ten plants that are located in seven states. These plants are "strategically positioned in each of the nation's major cattle producing areas" (35). IBP has ten beef slaughter operations, five beef fabrication plants, six hide plants and associated operations for processing gelatin, bone, blood meal and tallow refining. In 1979, the company processed 80% of the cattle they slaughtered and purchased 3% of the beef carcasses used in their fabrication operations from other sources (8).

IBP markets their boxed beef nationally in carlot loads and only on a whole carcass basis (i.e. the carcass equivalent in the boxed form). The company required 100,000 cattle per week for their high volume operations (7).

The other major boxed beef companies are much smaller than IBP. However, several of these firms are owned by large conglomerates or other large concerns. MBPXL formed in 1974 when Kansas Beef Industry, Inc. and Missouri Beef Packers, Inc. merged. It is owned by Cargill, an international marketer and processor of agricultural products. MBPXL has slaughter/fabrication facilities in Rock Port, Missouri; Friona and Plainview, Texas; Dodge City, Kansas and Wichita, Kansas. The Land O'Lakes cooperative acquired American Beef Packers and Spencer Foods and so it has become a major boxed beef producer. Monfort of Colorado is a cattle feeding company that is vertically integrated forward into the boxed beef industry.

Livestock Procurement for Boxed Beef Production

The dominant boxed beef firms need a large amount of livestock for their operations and the location of slaughter plants in relation to the supply of fed cattle is a critical factor in determining the competitive structure in the boxed beef industry. Boxed beef firms, which slaughter only steers and heifers (see Appendix B, Table 1, for the steer-heifer slaughter of meat packing firms), tend to buy large amounts of steers and heifers directly from farms and feedlots. In 1976, 66.3% of all slaughter livestock was purchased directly from country points by (boxed and non-boxed production) slaughtering plants (up from 65.9% in 1975 (21)), while 78.5% of the steers and heifers were purchased directly (26). In 1977, 69.4% of all slaughtered livestock and 80.2% of the steers and heifers were directly purchased (29). The latest report (1978) shows 73.4% and 83.7% direct purchases of livestock and of steers and heifers respectively (33).

Direct purchasing by the large boxed beef producers usually involves only a few packing firms bidding for a large number of cattle held by many small producers. The buying power of the large, centrally controlled producers is enhanced by their sophisticated communication systems that coordinate the firms' large purchases. Further, since the large boxed beef firms try to select cattle that will grade as yield grade 1, 2 or 3, their direct buying is likely to alter the type of cattle that remain to be offered in public sales.

In a study presented to the U.S. House Subcommittee, it was suggested that IBP can control beef trade in some regions by monopsonistic (buying) power (10). As the dominant buyer in an area, theoretically it could decide what to pay for cattle as well as what competitors will receive for carcasses (IBP buys a large number of carcasses for use in their fabrication process). For example, IBP slaughtered 2.2 million of the eight million fed cattle in the cornbelt and bought 460,000 carcasses from other packers. This gave them 30% of the market and a dominant position in the area (10).

Since a consistent, high volume of livestock is necessary for the boxed beef plants to operate at maximum efficiency and be most profitable, there is incentive to have an assured supply of livestock. This incentive is increased

in areas of high packer concentration that have excess slaughter capacity and competition in livestock procurement. Feeding livestock on custom feedlots and/or the acquisition of feedlots would provide a firm with a steady supply of livestock.

Feeders also have incentives for vertical integration with meat packers. There is an estimated cost of $10 to $35 per head for transportation, buying and selling commissions, shrinkage and death when animals are moved from ranches to packers (1). An optimally-sized feeding system (estimated to be 479,700 pounds of output annually) would have a potential net benefit of $34,700 for a cow-calf operation and $17,699 for a cow-yearling operation (1). The study by Araji (1) concluded that the fixed cost and transportation and handling costs of beef operations would strongly justify vertical integration in beef cattle production. There has not been, however, a consistent trend in packer feeding, and vertical integration has been largely prohibited. Between 1960 and 1976, the amount of packer feeding varied from 6.2 to 7.2% of fed cattle marketings (25). In 1975, packers fed 21.8% of the total fed cattle in Wisconsin, 6.3% in Nebraska, 0.6% in Kansas, 7.9% in California, 13.4% in New Mexico, 10.8% in Arizona, 23.3% in Colorado and 30.5% in Washington (21). But while the amount of packer feeding is not large, the influence of packer feeding may be important in localized areas.

In 1972-73, seventeen firms had acquired or proposed to acquire custom feedlots. The top four, the sixth and the eighth largest cattle slaughtering firms were involved (20). However, such acquisitions were judged to have a widespread effect on the competitive level in marketing fed cattle. Packers and Stockyards (P&S) Regulation 201.70a was issued: "Packers Not to Own or Finance Custom Feedlots; Custom Feedlots Not to Own or Finance Packers." The prohibition was based on the fact that vertical integration would have restricted competition and involved obvious conflicts of interest.

Despite the strong economic incentives for packers and feeders to integrate, it does not seem likely that the prohibition against vertical integration will be lifted. Alternatives with similar economic advantages may be sought. One such alternative is the five-year joint venture operation agreement between IBP and six Northwest feedlots in Idaho and Washington. The feedlots in the joint operation agreed to supply 67% of the 10,000 head kill per week required by the two IBP plants in Boise, Idaho and Pasco, Washington. (The two plants had been idle until the feeders invited IBP to participate in the joint venture-IBP purchased the plants and renovated them.)

Each entity in the joint venture (feeder and packer) operates at cost and then shares the profits. Feeders buy their own cattle and operate independently. The packing plant is assured of operating near capacity while the profits and risks on the fed cattle are shared.

This particular joint venture was challenged and there was a motion for a preliminary court injunction to restrain the venture in 1978 (27). After acquiring the two plants, IBP had two plants with a capacity of 474,300 head of slaughter per year. This was 46% of the total fed steer and heifer slaughter for 1976 in Idaho, Montana, Oregon and Washington. The six joint venture feedlots marketed 208,405 head of fed cattle or 22% of the total fed cattle in the four-state area. In a contract study for P&S, Peter Max of National Economic

Research Associates, Inc. concluded that the joint venture "confers on IBP the power to squeeze non-vertically integrated packers or packers integrated to a lesser extent than IBP on the supply side (fed cattle)." (27) The motion for the preliminary injunction was denied and P&S dropped the action against the venture because no adverse affect had been found. This appears to leave joint ventures as a viable option for future packer-feeder cooperation.

Boxed Beef Marketing

The retail food industry is large and powerful and it currently has enormous buying power. This is evidenced by, for example, packers agreeing to the offer and acceptance form of purchasing used by supermarket chains (6). Competition among meat packers to get and to keep large retail customers has been intense.

However, the larger, centrally controlled packing firms are beginning to recognize how a marketing concept focused on boxed beef, which plans, prices, promotes and delivers such "want satisfying" goods and/or services to their customers could be used to obtain a degree of countervailing power to that of the national retail chains (18).

Boxed beef has advantages over carcass beef in such a marketing approach. Boxed beef could be branded and the product could be differentiated on the basis of cutting style, amount of trim, quality of packaging and customized cutting service. Competiton with unbranded products is basically by price, whereas the successful use of branding and product differentiation could be used to create a demand which would "pull" the product through the distribution system.

The move to centralized control of decentralized operations in packing may be analogous to the retail use of central warehousing activities by individual chains. Management and decision making criteria are centralized and major packers can strive to maintain and control inventory and smooth production flows for merchandising and pricing purposes (18). These goals are easier to acheive with the longer storage life for boxed beef. Meat packers have more marketing flexibility with boxed beef than with carcass beef.

As large chainstore operations with central warehousing evolved in consuming areas, direct purchasing or large volume carlot beef carcass sales also developed. Boxed beef works well in such large volume direct sales since it can be shipped farther and will give the retailer more options on product mix distribution at the store level. The large volume production of boxed beef also permits a single firm to fill the large retail orders. Such marketing developments may enable packers to counter some of the retailers' buying power.

Summary Appraisal

The growth of boxed beef and the role of the large meat packing firms, such as IBP, in boxed beef production and marketing has been an area of interest, envy and concern to other participants in the meat industry. The issues of changes in market concentration and the possible development of monopolistic tendencies in the meat packing industry as a result of the boxed beef innovation have been and are currently being investigated. Legislation has been proposed which would limit the percentage of national and regional slaughter than any one company could control. There are provisions that would require firms slaughtering more than 10,000 head of beef or hogs annually to report slaughter data to the Department of Agriculture. The Secretary of Agriculture would then formulate national totals and set percentage limits of the totals that any one firm could produce. Separate limits on slaughter, boxed beef and centrally cut beef would also be set. Firms with three or more plants would face additional restrictions.

Is there a need for such legislation? Is the meat packing industry really developing a highly concentrated, uncompetitive structure? The current trend toward fewer and larger meat packing firms is expected to continue (18, 10). The changing industry conduct with regard to boxed beef marketing, coupled with the relatively static performance of the meat packing industry (i.e. the meat packing industry has been characterized by a static level of earnings per head of cattle, earnings which are linked to volume (18)), favors the trend to fewer and larger firms that handle and control still larger volumes. In testimony before a U.S. House subcommittee, Professor Willard Williams predicted that in the next 15 years there will be continued turnover in the number of small firms, some reduction in medium-sized firms and an increase in the "new generation" plants that handle more than 500,000 head per year (10).

Although boxed beef production is likely to become more concentrated among the largest firms which can handle a high volume of cattle at a low margin and which can meet the volume demands by the large retail chains by selling carload amounts, other meat packing firms have developed marketing and production strategies that allow them to survive and even complement the large boxed beef operations. The large firm plants will often fabricate more beef than they slaughter and a large number of carcasses must be purchased for fabrication. Small kill-and-chill slaughter plants that are located near the large boxed beef firms have the boxed beef firm as an accessible market for their carcasses. The small firms can supply carcasses to the large firm in a packer-to-packer sale. They are, however, likely to be price-takers with little marketing power in such a situation.

Small boxed beef operations have become specialized. The small firms use alternate cutting methods to customize their boxed beef product. For example, an Eastern plant in Boston fabricates carcasses to yield subprimal cuts which are in demand in the Northeast but not available from "Western style" boxed beef (9). Customized subprimals that are cut to purchaser's specifications (i.e. extra boning, trimming or more sectioned) can yield a higher price and make a small customized operation profitable. The small boxed beef producers usually sell less than carload amounts to distributors, hotel-restaurant purveyors or independent wholesale grocers. These smaller firms do seem to be able to coexist with the larged boxed beef firms.

The boxed beef market is likely to continue to expand. Retail firms with central cutting facilities may shift to using more boxed beef as labor and cutting equipment costs continue to increase. Additional markets for boxed beef will open if labor union restrictions on boxed beef use are removed. While the major boxed beef producer, IBP, has grown rapidly and captured a large market share, other packing firms can convert to boxed beef production and compete for a share of the expanding boxed beef market. Challenges to IBP's position in the boxed beef industry may come from other packing firms that have backing from large conglomerates.

Boxed beef producers are investigating yet other areas for expansion. Boxed pork production and centralized retail portioning are possible areas. A small amount of boxed pork (vacuum packaged and boxed) is currently being produced. IBP has acquired a pork slaughter operation and has announced plans for entering into boxed pork production (7). Central cutting of retail portions may take longer to develop. Retail cuts are very unstandardized and would be difficult to produce at a centralized plant. But whatever the type of slaughter, the boxed concept is an accepted one and one which will continue to have influence on the structural evolution of the meat industry.

APPENDIX A

Summary of Survey Results by G.R. Grace, Company on Boxed Beef Use in Retail Stores

Table 1: Concentration of Retail Fresh Beef Volume (1977)

% of Total, by Retail Segment			
Large Chains With Fabricating Facilities	14		
Large Chains Without Fabricating Facilities	26		
Total Large Chains (26 or more stores)		40	
Small Chains (2-25 stores)		26	
Total Chains			66
Affiliated Independents	29		
Unaffilliated Independents	5		
Total Independent Retailers			34
TOTAL			100

Source: (25)

Table 2: Fresh Beef Fabrication Prior to Receipt at Retail

	% of Total (Ground Beef Excluded)	
	1977	1980
Primal/Subprimal	57%	71%
Carcass	43%	28%
Consumer Cuts	*	1%
TOTAL	100%	100%

* Denotes less than 0.5%

Source: (25)

Table 3: Primal/Subprimal Fabrication Prior to Receipt at Retail

	% by Retail Segment	
	1977	1980
Total	57%	71%
Chain	71%	82%
Large (26 or More Stores)	83%	90%
With Fabricating Facilities	98%	95%
Without Fabricating Facilities	75%	87%
Small (2-25 Stores)	53%	69%
Independent Retailers	30%	52%

Source: (25)

Table 4: Reasons for Expected Increase in Primal/Subprimal Usage*

Reason	Total	Chain	Independent Retailers
Economic Benefits (lower labor costs) (cheaper to ship)	52%	69%	31%
Convenience (saves time) (easier to handle)	26%	16%	38%
Reduced Waste/Shrinkage	24%	23%	24%
Improved Inventory Control (buy only what need)	23%	13%	34%
Industry Trend	31%	32%	30%

* Includes multiple responses

Source: (25)

Table 5: Primal/Subprimal Packaging Prior to Receipt at Retail

	% by Package Type	
	1977	1980
Vacuum Package	59%	76%
Non-vacuum film/bag	14%	12%
None/Naked	27%	12%

Source: (25)

Table 6: Vacuum Packaging of Primal/Subprimal Beef

	% by Grocery Classification	
	1977	1980
Total	59%	76%
Chain	59%	76%
Large	70%	76%
Small	41%	76%
Independent Retailers	57%	75%

Source: (25)

Table 7: Reasons for Expected Increase in Vacuum Packaging Usage*

Reason	Total	Chain	Independent Retailers
Improved Shelf Life (keeps longer, retains color)	32%	31%	33%
Better Sanitation (reduces bacterial growth)	17%	21%	9%
Reduced Waste/Shrinkage	17%	20%	10%
Ability to Age in Package	13%	1%	33%
Economic Benefits (better profits)	8%	2%	19%
Industry Trend to Modernize	47%	40%	60%

* Includes multiple responses.

Source: (25)

Table 8: Retail Penetration of Vacuum Packaged Primal and Subprimal Beef

	% of Fresh Beef by Gorcery Classification	
	1977	1980
Total	41%	57%
Chain		
Large	50%	64%
Small	63%	69%
	33%	56%
Independent Retailers	24%	43%

Source: (25)

Table 9: Retail Receipt and Sale of Boneless Fresh Beef: 1977

	Boneless % of Beef		% of Boning Performed
	Received	Sold	Centrally
Total	17%	33%	52%
Chain	21%	35%	60%
Large	27%	38%	71%
Small	12%	31%	39%
Independent Retailers	10%	30%	33%

Source: (25)

APPENDIX B: Steer-Heifer Slaughter for Meat Packing Firms in 1970, 1977 and 1978

Table 1: Steer-Heifer Slaughter, 1978 by Firms as Compared with 1970 and 1977 and with Percentages by Firms Representing Relative Importance

No.	Firms by Size in 1978	Steer-Heifer Slaughter 1/ 1970	1/ 1977	2/ 1978	1978 % of Total	1978 Accum. %
1	IBP	2,033,611	3,741,387	4,485,712	16.10	16.1
2	Swift	2,105,299	1,988,245	1,914,474	6.85	22.9
3	MBPXL	651,993	1,407,192	1,651,653	5.90	28.8
4	Dubuque	253,415	995,351	1,020,745	3.65	32.5
5	Armour	1,608,665	1,096,956	870,137	3.12	35.6
6	Morrell	719,224	994,523	784,901	2.81	38.4
7	Spencer	875,805	1,231,524	654,961	2.34	40.7
8	Wilson	1,049,924	843,551	649,868	2.33	43.1
9	National Beef	320,083	564,830	558,726	2.00	45.1
10	Monfort of Colorado	340,021	525,408	554,964	1.99	47.7
11	Union of Omaha	301,133	351,168	503,073	1.80	48.9
12	Kane-Miller	--	--	489,039	1.75	50.6
13	Dugdale	238,510	412,605	455,991	1.63	52.2
14	Sterling Colorado	395,003	385,410	443,735	1.59	53.8
15	Morgan Colorado	--	337,609	362,214	1.30	55.1
16	Illini Beef	--	357,669	357,889	1.28	56.4
17	American Beef	849,663	531,929	356,766	1.28	57.7
18	Farmland Foods	42,085	270,502	293,398	1.05	58.7
19	Pepper Packing	239,914	242,674	278,959	1.00	59.7
20	Litvak Packing	150,885	265,750	255,549	.91	60.7
21	Flavorland Industry	--	434,925	249,829	.89	61.6
22	Amarillo Beef Processors	--	--	244,894	.88	62.5
23	American Stores	329,830	350,970	209,189	.75	63.2
24	United Packing Co.	2,439	--	196,300	.71	63.9
25	Vernon Meatland Inc.	--	--	187,528	.67	64.6
26	Hyplains Dressed Beef	123,615	177,219	172,982	.62	65.2
27	Gold-Pack Meat Co.	--	--	167,342	.60	65.8
28	Landy Packing Co.	--	81,514	157,278	.56	66.4
29	Glover Packing Co.	162,288	330,107	153,440	.55	66.9
30	Alpha Beta Packing Co.	--	--	153,140	.55	67.5
31	Hygrade Food Products	155,822	134,411	141,795	.51	68.0
32	Unknown, NE, Insp. #1803	--	--	139,819	.50	68.5
33	Sam Kane Beef PRocessors	56,445	150,997	139,151	.50	69.0
34	Sun Flower Beef Packers	80,507	121,205	130,582	.47	69.5
35	Schaake Packing Co.	45,496	129,656	129,527	.46	69.9
36	Raskin Packing Co.	149,031	137,375	126,171	.45	70.4
37	Packerland Packing Co.	268,206	136,619	122,683	.44	70.8
38	Aurora Packing Co.	97,585	131,645	119,349	.43	71.2
39	Bristal Food Crop.	125,409	58,083	116,209	.42	71.7
40	Unknown, NE, Insp. #613	--	--	113,460	.41	72.1
41	Cross Bros. Meat Packers	117,497	94,562	110,708	.40	72.5
42	Minden Beef Co.	83,268	113,317	110,463	.40	72.9
43	E.W. Kneip	--	--	108,947	.39	73.3
44	Lincoln Meat Co.	99,026	116,085	108,379	.39	73.7
45	Siouxland Beef	--	71,092	105,802	.38	74.0
46	Diamond Meat	90,141	125,415	105,585	.38	74.4
47	A.F. Moyer & Sons	--	--	102,675	.37	74.8
48	Beef Nebraska	50,729	104,066	102,559	.37	75.2
49	Great Western Packers	72,964	83,811	92,821		75.5
50	Serv-U-Meat Packers	61,649	84,404	92,660		75.8

1/Data provided by P&S Administration of USDA
2/Data through FSQS of USDA

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