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Beef is important to consumers' diets as a primary source of protein. About 25% of the consumer food budget is spent on meat, and beef accounts for about 60% of this amount. Recent rises in beef prices have had, therefore, a strong impact on the public. Findings/Conclusions: In the first half of 1978, beef prices rose to record levels. The main reason for the recent price rise appears to be the regular 10-year cattle cycle which has resulted in a decreased cattle inventory. Other factors also affect the final retail price of beef and the entire beef marketing system. There are serious concerns over the increasing concentration and market control within the beef marketing system and the Government's ability to deal with this concentration. Industry officials believe that prices quoted by the "Yellow Sheet," a publication based on market information, are subject to manipulation. Producers and feeders have also charged that they have little control over prices set by packers and retailers. Groups within the beef industry, the Federal Government, and the consumer movement are concerned about the role of the Government in insuring beef supply safety and quality. Several innovations that are being considered may enhance the ability of one industry segment to control the

market, and other innovative practices would affect traditional ways of determining yield and quality. The cattle industry has criticized the practice of importing beef because it depresses prices, but consumers have been the beneficiaries. Although cattlemen have blamed the cattle futures market for price fluctuations, the market is widely used and supporters claim it minimizes price risks and stabilizes the market. Inconsistent State transportation regulations are also a source of concern to beef producers. (RRS)

7776

STUDY BY THE STAFF OF THE U.S.

General Accounting Office

Beef Marketing: Issues And Concerns

Recent rises in the price of beef--to record levels--have been of significant concern to American consumers, as beef is a consumer diet mainstay, a chief source of protein, and constitutes a major portion of the food budget.

This study briefly describes the beef marketing system and calls attention to some of the more important matters which affect the system and beef prices. GAO also raises a number of questions for those concerned with the efficient operation of the beef industry and the price of beef.

The main issues discussed are: increasing market concentration and power by industry middlemen, potential for price manipulation, beef safety and quality, processing and merchandising trends, imports and exports, futures trading, and beef transportation.

CED-78-153
SEPTEMBER 26, 1978

FOREWORD

In the first half of 1978, beef prices rose to record levels, with predictions of even further price increases through 1980. Because beef is such an important item in our diet and our food budget, much has been said about the causes of these beef price increases. The major reason for the recent price rise seems to be the regular 10 year "cattle cycle," which has resulted in a decreased cattle inventory. Many factors exist, however, which affect the final retail price of beef and the entire beef marketing system as well.

This staff study is designed to provide a better understanding of some of the complexities involved in beef marketing. The study is primarily based on our past and ongoing reviews, from discussions with industry and consumer representatives and Government officials, and from existing reports of other Government and private agencies.

The study discusses some of the major issues and concerns affecting the system. After the discussion of a particular issue, we have added questions, hoping to stimulate further discussion and thought regarding methods to improve the beef marketing system.

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STUDY BY THE STAFF OF THE
U.S. GENERAL ACCOUNTING OFFICE

BEEF MARKETING:
ISSUES AND CONCERNS

D I G E S T

This study presents an overview of the beef marketing system, from the cattle producer to the consumer and highlights some major concerns and issues. GAO raises several questions which should be considered by the Federal agencies involved, the beef industry, academicians, and others concerned with the efficient operation of the industry and beef prices.

Beef is important to consumers' diets as it is a primary source of protein. Also, about one-fourth of the consumer food budget is spent on meat, and beef accounts for about 60 percent of this amount.

Recent rises in beef prices, therefore, have a strong impact on the consuming public. While consumers enjoyed relatively inexpensive beef for the past few years, a substantial rise in prices was seen in 1978--to record levels--which experts predict will continue through the year and possibly into the next decade.

Much of this fluctuation is due to the regular 10-to-16 year cattle production cycle. Beef prices are high when supply is low. Cattlemen then build their herds and flood the market, lowering the prices. In response to the lower prices, ranchers reduce the size of their herds by slaughtering cows used for breeding and many female calves they otherwise would have raised to breed. Eventually, the beef supply drops off and prices begin to rise. (See pp. 8 to 10.)

Many activities within the marketing chain undoubtedly affect the price, quality, and wholesomeness of the beef which eventually reaches the consumer. Critics both in and out of the beef industry have raised a number of questions about the beef marketing system and its various practices. After a review of reports; hearings, and records of litigation; and discussions with representatives of government, industry, and consumer groups, GAO analyzed numerous marketing activities and

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highlighted some of the major concerns and issues for further consideration. Among these issues are the following:

--Market control and Government oversight responsibilities: There are serious concerns over increasing concentration and market control within the beef marketing system and the Government's ability to deal with the issue. An attempt by the Packers and Stockyards Administration (P&SA) to deal with one new development--packer's actions to acquire financial interests in custom feedlots--was thwarted by the courts which said that P&SA lacked authority to regulate feedlots. The agencies responsible for assuring fair market practices do not appear to be allaying the many concerns about the threat of new economic concentration in the beef industry. Questions to be considered include: (1) Are certain segments of the beef industry exercising and extending undue market power and control over other segments? and (2) Should the Packers and Stockyards Act be amended to adequately spell out congressional intent as to P&SA authority over feedlot operations? (See pp. 15 to 21.)

--Pricing Practices: Much beef price setting is determined by a formula based on market information provided by a publication called "The Yellow Sheet." Many industry officials believe that prices reported by the sheet are subject to manipulation. Producers and feeders have charged in recent litigation that they have little control over prices set by packers and retailers. Questions which arise include: (1) Should marketing innovations, such as "electronic auctions," be established on regional or national levels? If so, who should establish them? and (2) Should a beef market information system, either public or private, be established which would provide accurate

daily sales, price, and volume data to all segments of the industry? (See pp. 22 to 31.)

--Beef Safety and Quality: Various groups within the beef industry, the Federal sector, and the consumer movement are concerned about the role of the Federal Government in insuring beef supply wholesomeness and palatability. Questions surround issues such as the lack of microbiological standards for retail cuts of beef, the use of controversial growth promotants and antibiotics in cattle feed, nutritional considerations related to highly marbled meat, and the usefulness of the grading system. Some questions for consideration are: (1) What should the Federal Government do to alleviate these concerns? and (2) Do consumers and other food handlers have enough information about the nutritional qualities of and proper handling practices for meat? (See pp. 32 to 42.)

--Processing and Merchandising: The marketing system is considering several innovations, such as frozen beef, mechanically deboned meat, hot boned beef, and various methods of beef tenderization. Some of these innovations may enhance the ability of one industry segment to control the market, such as retailers' ability to control supplies of frozen beef. Other practices would affect traditional ways of determining yield and quality of the carcass, such as tenderization procedures which could affect Agriculture Department criteria for determining beef quality. What effect will these innovations have on Government regulations and consumer acceptance? (See pp. 43 to 48.)

--Imports and Exports: The cattle industry has criticized the practice of importing beef because it depresses domestic prices. Consumers have been the beneficiaries, with experts estimatting that elimination of all imports

would force processed beef prices up by almost 50 percent. The export market for U.S. beef is minimal because of trade obstacles along with the preference of many foreigners for beef which is leaner than that usually produced in America. Questions for consideration are: (1) Would a countercyclical beef import formula--imports would increase as U.S. production decreases and imports would be reduced as U.S. production increases---reduce meat imports below current levels, possibly leading to increases in trade protection in other countries? and (2) What actions could be taken to expand beef sales to foreign countries? (See pp. 49 to 52.)

--Futures Market: Cattlemen have blamed the live cattle futures market for price fluctuations. Yet this market is widely used and supporters claim it minimizes price risks, stabilizes the cattle market, and increases the dissemination of price information. There is controversy over the merits of the futures market and it is widely misunderstood by cattle producers. Among questions for further study are: (1) Do futures market prices adversely affect cash prices for purchases and sales of live cattle? If so, can safeguards be implemented to alleviate this impact? and (2) Do packers, market speculators, or other groups have an undue influence on the futures market to the detriment of cattlemen and consumers? If so, what action could be taken to prevent this? (See pp. 53 to 57.)

--Transportation and Shipment: Inconsistent State transportation regulations have been a source of considerable concern in the beef industry. The fact that trucks, which transport cattle, are restricted by Federal regulations on the types of loads that can be carried on the return trip is also of concern. This means many trucks often return empty from a trip. In this regard, questions posed are:

(1) What effect do differing State regulations which govern trucking weights and trailer lengths have on livestock and beef transportation costs? and (2) Would changes in Federal restrictions result in lower costs for transporting beef and in lower prices to consumers? (See pp. 58 to 60.)

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ABBREVIATIONS

CFTC	Commodity Futures Trading Commission
CME	Chicago Mercantile Exchange
FDA	Food and Drug Administration
FSQS	Food Safety and Quality Service
FTC	Federal Trade Commission
GAO	General Accounting Office
HRI	Hotels, restaurants, and institutions
ICC	Interstate Commerce Commission
ITC	International Trade Commission
NCA	National Cattlemen's Association
OTA	Office of Technology Assessment
P&SA	Packers and Stockyards Administration
USDA	United States Department of Agriculture

CHAPTER 1

INTRODUCTION

Beef is important to consumers because it is a diet mainstay and is a chief source of protein. Each year, consumers spend about one-fourth of their food budget on meat. Of this amount about 60 percent is for beef which in 1977 totaled an estimated $27.8 billion. 1/

Beef production has spiraled in the past two decades in response to strong consumer demands. In 1977 beef consumption, which had doubled in the past 25 years, was at 93 pounds--retail weight--per person. (See app. II.)

Although beef prices remained relatively stable since 1973, the year of price controls and boycotts, record levels were reached in the first half of 1978. In June 1978 retail prices for Choice beef were up almost 33 percent from a year earlier. The annual average price per pound of Choice beef was at $1.46 per pound in 1974, $1.55 in 1975, $1.48 in 1976, and $1.48 in 1977. The average price had risen to $1.95 per pound by June 1978. Industry analysts expect a continued retail price rise throughout 1978 and, most likely, into the 1980s as a result of the "liquidation phase" of the cattle cycle. (See p. 8.)

Critics in the beef industry and consumers have recently raised a number of issues about the marketing system which which may be adversely affecting the various segments of the beef industry. Prompted by concern about these problems, the Congress has inquired into such areas as the beef pricing mechanism, the use of cattle feed additives, and the issues of beef imports and transportation costs. (See app. I.)

This report presents an overview of the beef marketing system. This overview briefly describes the marketing system from cattle producer to consumer, highlighting some major concerns and issues affecting the system. We believe appropriate Federal agencies, the beef industry, academicians, and others concerned with the efficient operation of the industry and beef prices should consider the questions we have noted in the study.

1/ Based on the average retail price of Choice grade beef and does not attempt to account for prices of other grades or the value of away-from-home consumption.

SCOPE OF STUDY

During this study we reviewed congressional hearings and Government and academic studies related to the beef industry. We also interviewed Government officials from several agencies within the United States Department of Agriculture (USDA), as well as officials of the Federal Trade Commission (FTC), the Justice Department, and the Commodity Futures Trading Commission (CFTC). In the private sector, we spoke with representatives of all segments of the industry including producers, feeders, packers, retailers, and consumer representatives. Further, we examined current litigation concerning the beef industry.

CHAPTER 2

THE BEEF MARKETING SYSTEM

EVOLUTION

In the mid to late 1800s, cattle were marketed by dealers who purchased the animals from ranchers and sold them to packers around the Nation. Cattle were herded great distances, causing weight losses and injuries. With the advent of railroads, cattlemen could move their herds shorter distances to railheads for shipment to large terminal markets.

A terminal market is a public auction, near an established transportation center, which contains physical facilities for caring for and marketing animals. Packing plants, located adjacent to these markets, purchased about 90 percent of their cattle through the 80 terminal markets during the 1920s.

Terminal market sales were not as advantageous for cattle producers as they were for packers. Producers usually had to ship animals some distance to these outlets. Moreover, they rarely had enough market information to adequately judge the value of their animals.

When trucks began competing with railroads in moving cattle to market, however, producers were no longer tied to the fixed rail system to move their animals. Truck transportation facilitated geographic dispersion of the industry and movement away from terminal markets.

In the 1920s local auction markets developed. These markets allowed the producer a greater role in the cattle sales. In 1930 approximately 200 local auction markets existed in the United States. By 1975 however, the number had risen to approximately 2,000, with packers purchasing 20 percent of their cattle through these markets. There has been a corresponding decline in the use of the terminal market. The number of cattle purchased at the remaining 30 terminal markets had dropped to 14 percent by 1975. The decrease in use of railroads and increase in trucking contributed to the decline of the terminal market.

The auction sale of cattle declined markedly from 90 percent in 1920 to 34 percent in 1975. The evolution of the feedlot and the relocation of the packing house, near feedlots, facilitated the growth of the direct sale of cattle.

Until the late 1940s most cattle marketed in the United States were fed on grass or forage. But as cattle feeders began feeding cattle on excess grain supplies (finishing), the American consumer demonstrated a desire for this grain-fed beef, and grain feeding of cattle became an integral part of the beef system. In 1977 the cattle feeding industry included about 132,000 feedlots, most of which were extremely small farmer-feeder type operations of 100 cattle or less. But there were a few large operations among these feedlots. By 1977, 1.4 percent of the feedlots marketed 68 percent of the cattle.

After World War II, the evoluation of modern refrigerated transportation permitted the packing industry to decentralize its operations by moving the packing plants to livestock feeding areas. Now packing plants could purchase livestock directly from farmers and feeders either at auction markets or by bypassing the markets. Direct sales enabled packers to easily purchase large quantities of animals to meet their increased slaughter capacities.

During this period of growth and the relocation of feedlots and packers, changes were also occurring in the retail segment of the beef industry. Before 1940 butcher shops were the primary beef outlets. After USDA grades became prevalent, however, the retailer could better define the quality of meat he wished to buy. Now retail chains could assure product uniformity, and they began offering self-service meat counters. In 10 years the number of self-service retail store meat counters rapidly increased from 10 in 1944 to 11,500 in 1954. Chain retail supermarkets also began to take progressively larger portions of retail food sales, including beef.

Retail Chains' Share Of Grocery Sales

Year	Sales by chains billions	Percentage of total grocery sales
1930	$ 3	32
1940	3	35
1950	10	37
1960	20	38
1970	42	48
1976	71	47

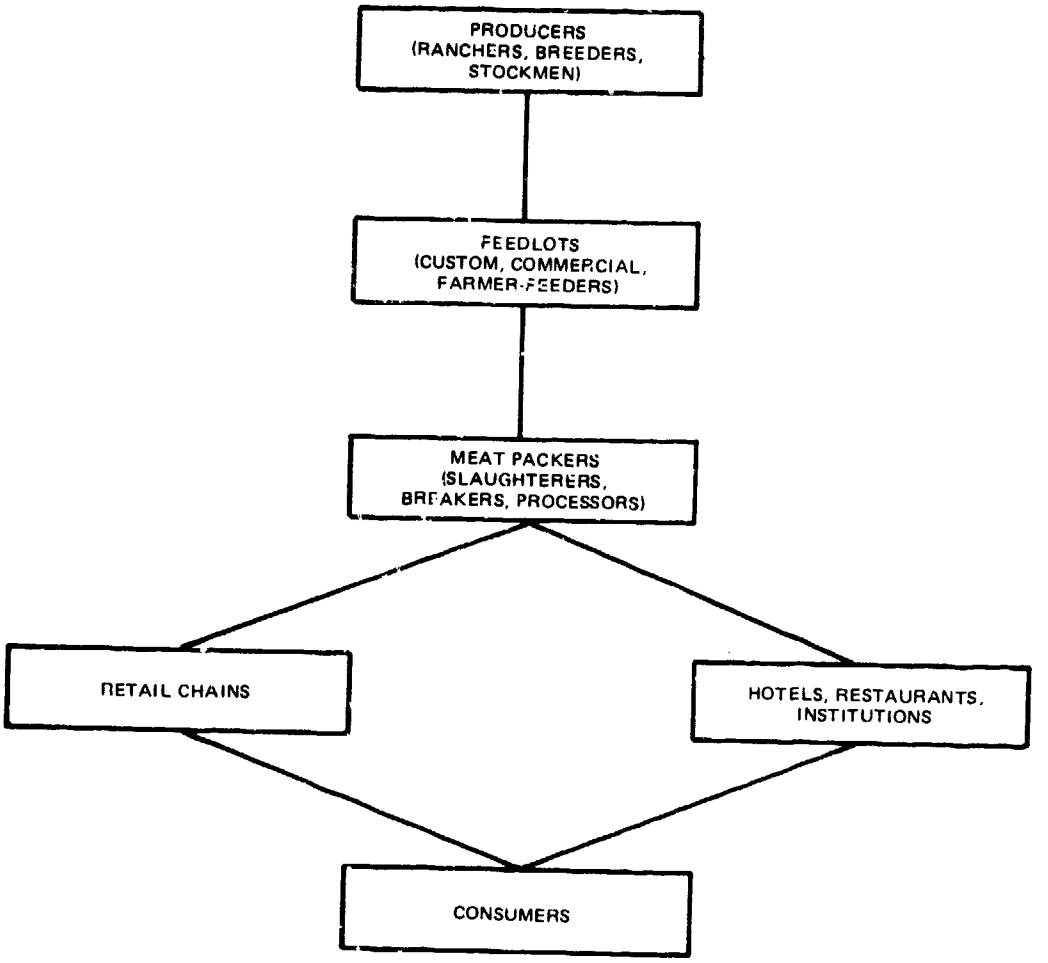
Dramatic changes in beef marketing have occurred in the past decade. Retail chains have entered meat processing and new kinds of packer/processors have specialized in

"boxed beef."1/ Further, technological innovations may have helped lengthen product shelf life.

CURRENT MARKET BY SEGMENT

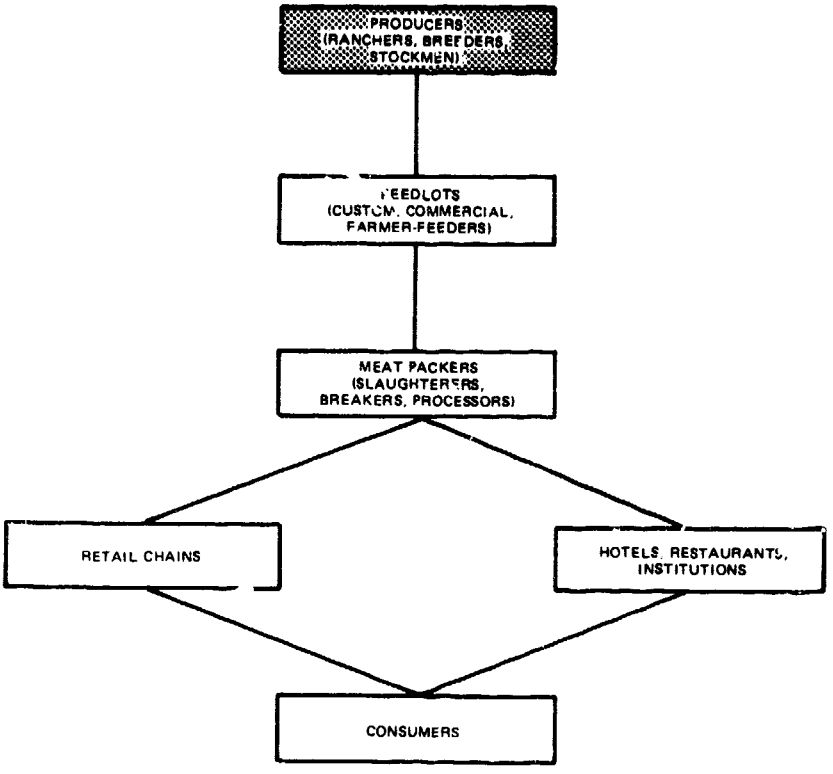
The beef marketing system includes: cow-calf producers; feedlots; middlemen (slaughterers, breakers, institutional sales, retailers); and, ultimately, the consumer. The following chart shows the major segments of the marketing system:

MAJOR BEEF MARKETING SEGMENTS



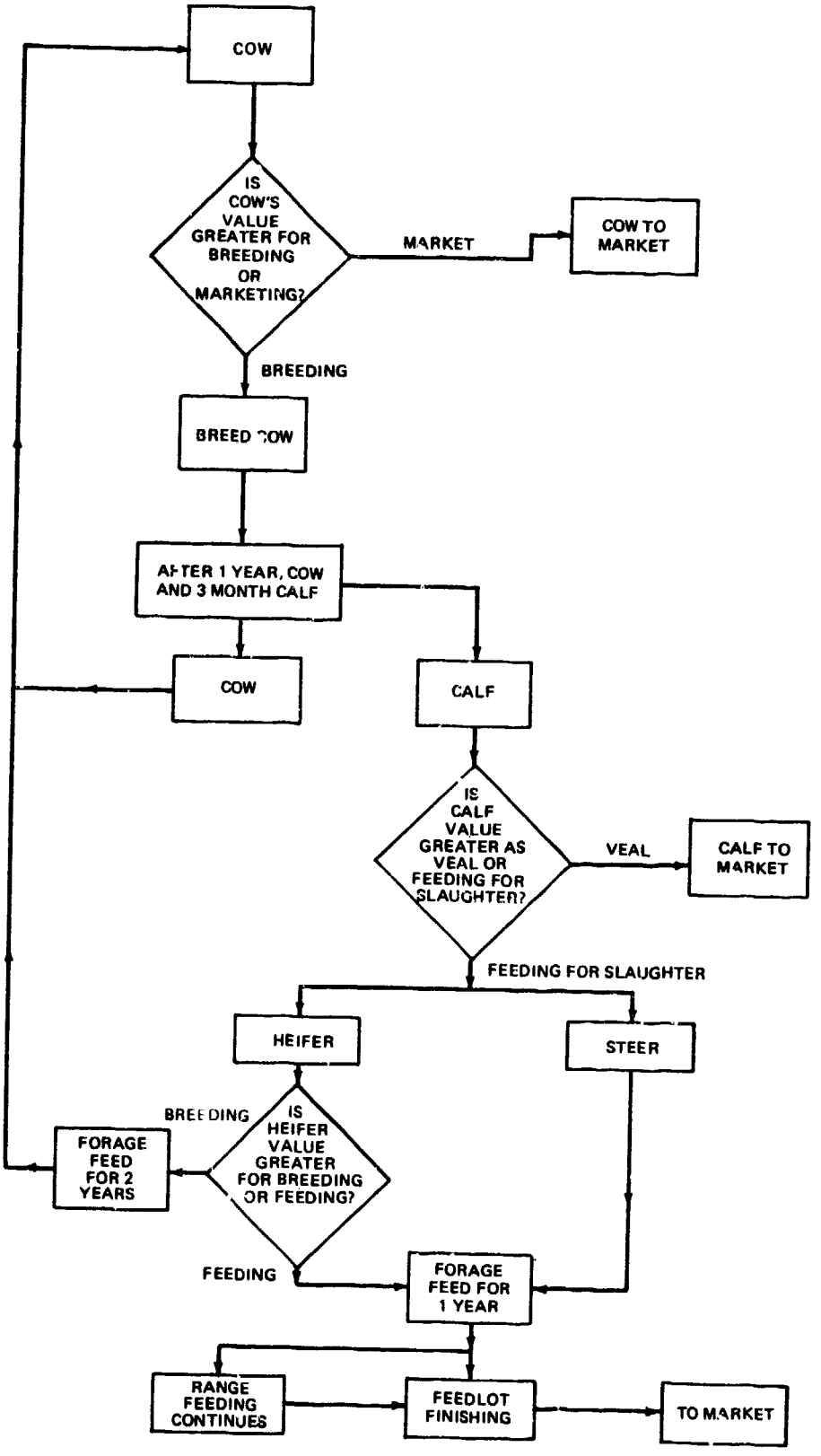
1/Boxed Beef--Under this method, the carcass is broken down into progressively smaller cuts, and vacuum packaged and boxed. This process greatly extends the storage life of the cut-up beef.

Cattle producers



The initial beef marketing phase includes small, geographically dispersed producers. (See app. V.) A typical cattle operator feeds calves on grass, forage, and grains to weights of approximately 600 to 700 pounds. The operator may then decide to send his calves to early slaughter as baby beef or veal, grass feed them to maturity, deliver them to feedlots for finishing (fattening on grains), or retain them for herd expansion. The chart on p. 7 illustrates the basic options producers have in marketing cattle.

CATTLE PRODUCERS' DECISIONS



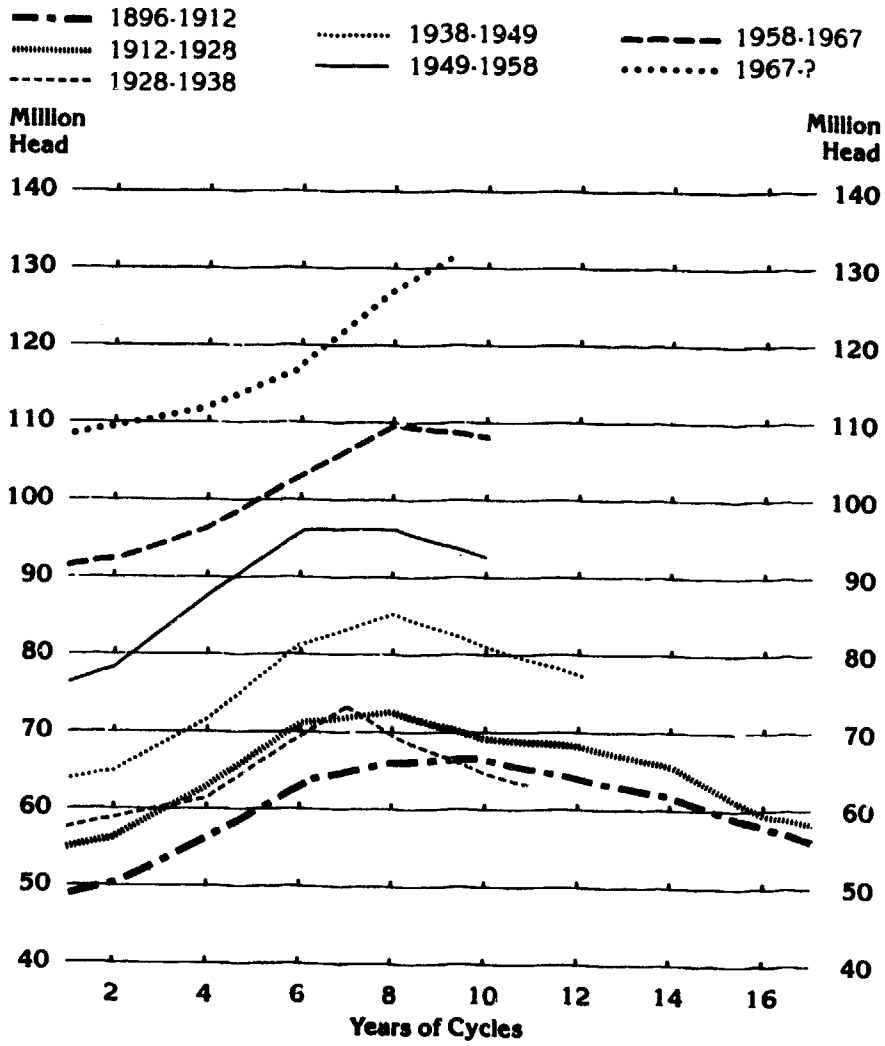
The cattle cycle

Supply fluctuations have been a continuous phenomenon in the beef industry. The cattle cycle works in the following manner. When the supply of cattle is low, farmers get high prices for their animals. Motivated by the higher prices, producers increase herd size by withholding heifers from slaughter and using them for breeding. This withholding of heifers further reduces an already limited supply of cattle available for slaughter and prices rise accordingly. This price spiral continues for several years until the calves from the expanded herd are ready for marketing. When the producers have decided to expand their herds, they have little control over the production timetable as it takes from 2 to 3 years to raise, feed, and--ultimately--market cattle.

After the herds have been expanded, too many cattle become available for market, resulting in lower prices paid to producers. Cattle producers inevitably reduce herd size, sending breeding stock to slaughter, thereby flooding the market and further reducing prices. As a result of this "liquidation phase", supplies eventually become depleted and, predictably, prices rise. Once again, producers expand herds and the cycle repeats itself.

Cattle cycles have been observed and recorded since the late 1800s. Historically these boom and bust cycles take 10 to 16 years to complete. The chart on p. 9 illustrates the cyclical fluctuations of cattle supply:

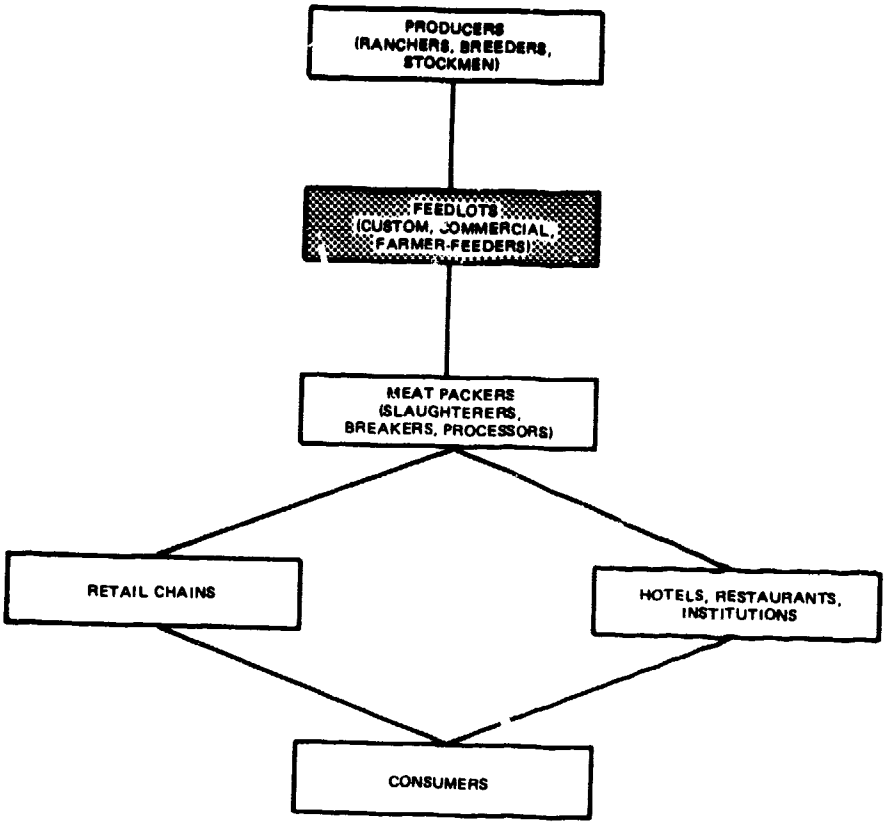
CATTLE CYCLES: 1896-1975



Source: **Cattle on Feed Report**, Crop Reporting Board, SRS, USDA.

Market observers believe that cattle began flooding the market again about 1975, pushing prices down at producer and feedlot levels. For about the past 3 years, cattle producers have been cutting back their herds in response to the low beef prices and poor range conditions. As the size of the cattle herds decreased, per capita beef supplies became less and prices rose. Prices will likely continue to rise and remain high until producers increase their herds. This may take a few years, because of the time needed to raise new animals.

Feedlots



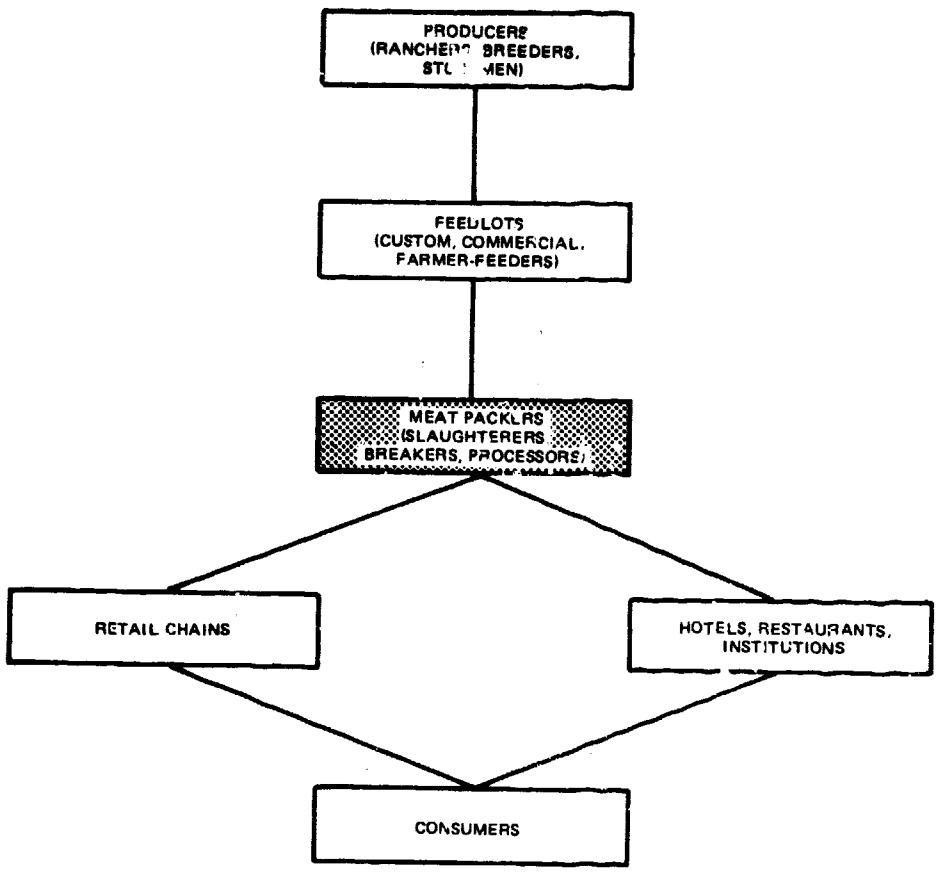
In the 1940s when most cattle were pasture- or range-fed, commercial feedlots were virtually unknown. But the technological developments described earlier changed all that.

Today cattle weighing 600 to 700 pounds are fed at feedlots on grain and feed additive diets until they reach slaughter-ready weight of about 1,050 pounds. As of 1976 about 56 percent of cattle slaughtered were feedlot-fattened.

Feedlot sizes range from small farmer-feeder type operations with less than 100 head capacity to the large commercial feedlots with 20,000 to 30,000 head capacity or even greater.

Since the profit made by feedlots is based on weight gain, feedlot operators could choose, rather than buying cattle, to charge fees for fattening animals owned by others. This reduces their risk by not requiring large capital investments. All cattle in the feedlots, therefore, may not be owned by feedlot operators. The process of feeding cattle owned by others is known as "custom feeding."

Packers/processors

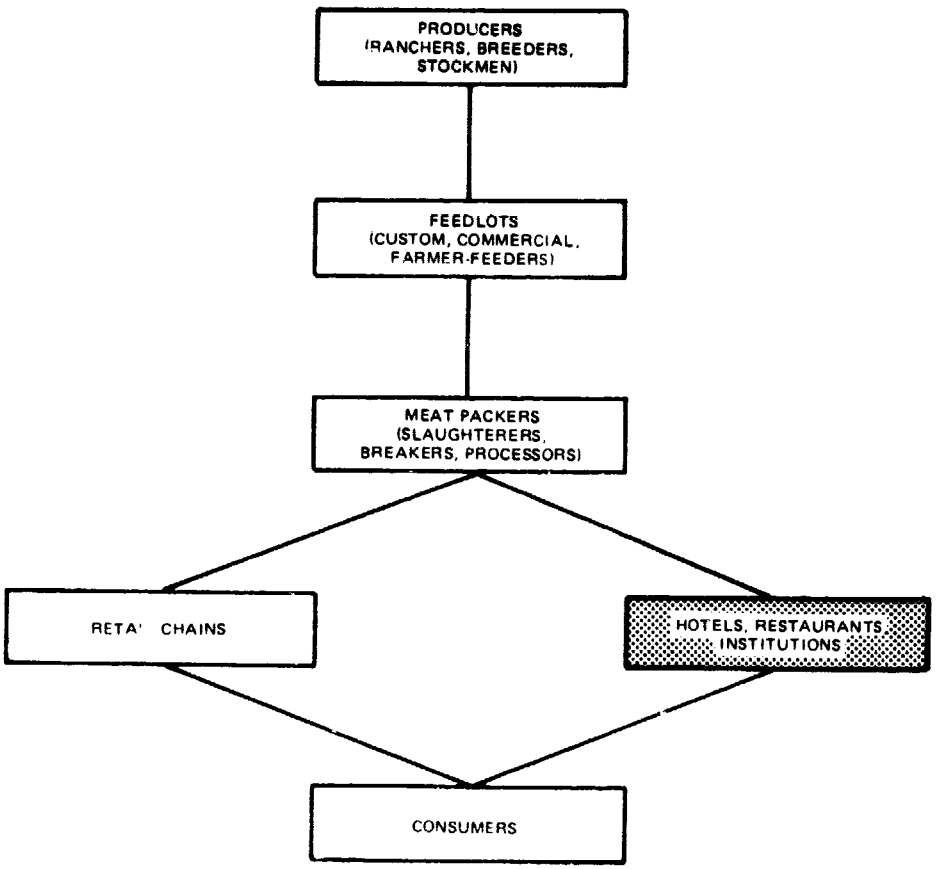


Once in the hands of the packer/processors, the 1,050-pound animal is slaughtered to a carcass weighing approxi-

mately 600 pounds.1/ This carcass is broken into two sides, each having eight major cuts known as primals. The carcass may be sold to a processor for further fabrication (breaking, packaging, etc.), or the packer may choose to process the carcass.

For many years, the packers' major product was the side of beef, which was delivered directly to the retailer. Large retail chains have recently established warehouses to further process the carcasses before distributing products to their retail stores. Many large packers have responded by marketing some of their own output as packaged boxed beef cuts.

Hotels, Restaurants, and Institutions

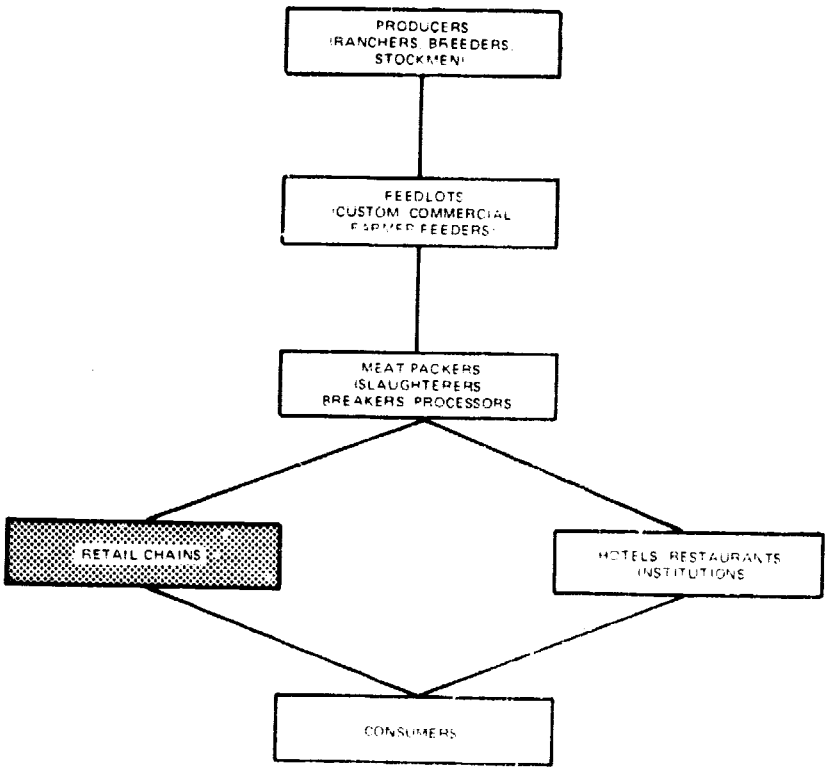


1/The balance of weight is in byproducts. All products other than carcass meat are byproducts, such as bones, hides, skin, fats, hooves, and blood. Byproducts have become an important profit item to packers. In fact, the sale of byproducts can determine profits or losses.

The hotel, restaurant, and institution (HRI) segment of the beef marketing system provides meat in ready-to-eat forms. The HRI segment is comprised of commercial food service establishments (restaurants, cafeterias, etc.), school cafeterias, military mess halls, and clubs and other government-operated programs. Of the approximate 535,000 HRI establishments, 364,000 are commercial food service businesses.

About 25 percent of all beef is marketed through commercial eating establishments. Two out of five meals are eaten away from home now, and by 1980 half of all meals are projected to be consumed outside the home.

Retailers



Major distribution for the beef marketing system is done by the Nation's 184,000 retail grocery stores. More than $153 billion in sales was reported for 1976.

Beef was once distributed to grocery stores in carcass form and divided by the butcher into consumer cuts. But high costs have moved many cutting operations out of retail stores. Today about 72 percent of the beef sold by

retailers in the United States is precut before it arrives at local markets for final cutting and packaging into consumer units.

The retail display life of fresh beef is important to retailers. Vacuum packaging of major cuts may increase storage life, but, once in retail cases, beef will only last about 2 to 3 days before color changes make it less visually desirable.

Beef merchandising, meanwhile, varies greatly among retailers. Most retailers prominently display notices that their beef is USDA safety inspected, and some retailers sell beef bearing the USDA quality grade. Other retailers may sell store branded beef, hoping that the brand's reputation will ultimately earn the same customer confidence as the USDA grade. Still other retailers may sell beef without quality grade or brand name labels.

CHAPTER 3

MARKET CONTROL AND GOVERNMENT RESPONSIBILITIES TO ASSURE FAIR MARKET PRACTICES

Although there are three Federal agencies whose authority includes assuring fair beef marketing practices, segments of the beef industry have been charged periodically, both by the Federal Government and by those within the industry, with price fixing and attempted monopolization. Indications from the numerous court cases in litigation at the time of our review (see app. IV), indicate that anticompetitive practices are of concern again.

MARKET CONTROL: A RECURRENT ISSUE

Genuine free market competition has never appeared to be strong in this industry. As early as 1888 several meat packing firms formed a pool and the Federal Government subsequently charged them with collusion to (1) fix prices and and (2) divide and control livestock purchases and sales territories. This packers' pool was partly responsible for adoption of the Sherman Anti-Trust Act of 1890, (15 U.S.C. 1 et seq. (1976)), which made any combination restraining trade illegal.

But antitrust laws did not deter the packers, and by the early 1900s the meat packing industry was controlled by five firms. In 1917, as public criticism, court actions, and proof of restrictive practices accumulated, President Woodrow Wilson ordered an FTC investigation. After an 18-month investigation, the commission reported that it found conclusive evidence of extensive economic concentration in the industry: five packers--the "big five"1/ -- controlled the packing industry by (1) owning transportation and distribution networks, (2) being involved in wholesaling and stockyards, and (3) possessing interests in market and price infortion outlets and retail stores.

Soon after the publication of the FTC report, an antitrust action was filed by the United States against the five leading meat packers. The litigation resulted in the Packers' Consent Decree of 1920 in which the big five consented to discontinue retail meat sales and give up interests in public stockyards,

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1/Swift, Armour, Morris, Wilson, and Cudahy.

railroad terminals, and market news outlets. The big five were allowed to retain their warehouse and distribution systems to support their primary business--meat packing.

Packers and Stockyards Act

Primarily as a result of activities disclosed by the FTC inquiry, in 1921 the Congress passed the Packers and Stockyards Act (7 U.S.C. 181 et seq. (1976)). The act regulates the business practices of those engaged in livestock and live poultry marketing and meat and poultry packing in interstate and foreign commerce. The basic objective of the act is to assure that the market remains competitive. In part, the act prohibits packers and livestock dealers from:

--engaging in unfair, discriminatory, or deceptive practices;

--manipulating or controlling prices, creating a monopoly, or restraining commerce; or

--conspiring to apportion territory or manipulate prices.

The Packers and Stockyards Administration (P&SA) was subsequently established within USDA to carry out the provisions of the act.

Other primary Federal agencies having responsibilities to insure beef industry competition are the Justice Department and FTC. These agencies are discussed later in this chapter.

Other Federal agencies, such as the Food and Drug Administration, Commodity Futures Trading Commission, Food Safety and Quality Service, having regulatory responsibilities involving feed additives, commodity futures, beef safety and quality, and which affect the makeup of the industry, are discussed in later chapters. These agencies, however, are not directly responsible for insuring competition.

RENEWED CONCERN OVER INCREASING MARKET POWER

The Consent Decree of 1920, aided by changing economic conditions, restricted the growth of the original big five packers. 1/ New industry giants have come into being, how-

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1/ In 1923 Morris was absorbed by Armour & Co.

ever, raising the possibility of increased market concentration levels.

A series of interrelated actions have occurred during the past decade. New slaughtering firms, located in cattle feeding areas away from the terminal stockyards, have acquired an increasing proportion of the slaughtering business. Bypassing the traditional distribution network and selling directly to the retailer, these plants have cut middleman and transportation costs.

With locational changes came a second economic development: plant specialization. Since the 1960s many packers have begun to specialize in single-specie slaughter plants (either beef, lamb, or pork) rather than the traditional multispecie combination of beef, lamb and pork. Some firms have become dominant industry forces primarily due to their large capacities and improved slaughtering efficiency.

Market concentration

Although market concentration has been present in the beef industry for over 80 years, the four-firm concentration level 1/ in the packer segment in recent years seems to be decreasing, as shown below.

Top 4 Packers' Percentage of
Cattle Purchases To Total Commercial Slaughter
1967-1976

Year	Percent
1967	22.21
1968	21.49
1969	22.95
1970	21.33
1971	21.41
1972	22.26
1973	22.79
1974	20.91
1975	19.27
1976	19.57

1/When four firms together control in excess of 50 percent of the market, some economists believe oligopolies--or shared monopolies--begin to exist. The four-firm concentration level is used as an index of market concentration.

Based on the figures above, the national market for beef at wholesale may be regarded by some economists as competitive, however, procurement of livestock is localized. In fact on a regional or local level, four-firm concentration ratios are quite high. For example, the Director, Industry Analysis Staff, P&SA, in testimony before the Subcommittee on SBA-SBIC Legislation, House Small Business Committee, in June 1975 noted that

> "***for the 25 largest fed-cattle slaughtering states, accounting for 96 percent of fed-cattle slaughter, weighted average market shares at the four-firm level were about 56 percent in 1969, 55 percent in 1970, 59 percent in 1971, 62 percent in 1972, and 64 percent in 1973."

In these concentrated market situations, the livestock market buyers have more market power than sellers. Decisions of a single packer to buy or not to buy could affect prices. Similar decisions of a single seller may have no price effects at all. It was in this environment during 1972 and 1973 that P&SA became concerned that some packers were acquiring or making plans to acquire custom feedlots.

Packers owning custom feedlots may have cattle on feed for eventual slaughter in their own packing plants and may also be feeding and selling cattle for others. This could give the packer an undue advantage, as they have access to price information involving cattle they do not own but for which they are selling agents.

P&SA lacks authority over feedlots

Possibly due to the new economic developments, P&SA recognized the potential for renewed anticompetitive activities and, in 1974, moved to discourage packers from acquiring financial interests in custom feedlots. Responding to the anticompetitive effects of this type of integration, P&SA prohibited--under regulation--dual ownership of custom feedlots and packing establishments.

But P&SA's attempt to extend its authority over custom feedlots suffered a legal setback. In a civil suit 1/ challenging P&SA's authority over feedlots, an appellate court

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1/ Solomon Valley Feedlot, Inc. v. Butz, 555 F.2d 717 (10th Cir. 1977).

held that the wording of the Packers and Stockyard Act, as amended, did not include feedlots and that feedlots did not engage in activity that Congress intended to regulate. The Court ruled that feedlots were not subject to the act.

P&SA's 1974 regulation had specifically disallowed interlocking ownership of feedlots and packers, however, the result of the court decision seems to permit continuing cross-ownership of packing plants and custom feedlots. In effect, P&SA no longer has the means to enforce its prohibition of this type of integration.

FEDERAL RESPONSIBILITY TO ASSURE FAIR MARKET PRACTICES

Three principal agencies, P&SA, Justice Department, and FTC, have responsibilities for assuring that unfair preferential treatment, territorial apportionment, price manipulation and control, and other unfair methods of competition, do not occur in the beef industry. P&SA is responsible for oversight of the beef industry through wholesale operations, which can include central cutting and/or distribution centers that retail food chains operate to supply individual stores. FTC has jurisdictional responsibility at the retail level to identify competitive problems which may be resolved through appropriate antitrust law enforcement initiatives. Justice is responsible for handling enforcement for P&SA. All three agencies can perform investigations, however, only Justice and FTC can prosecute antitrust law violations.

Recent actions by Federal agencies

At the time of our review P&SA was engaged in a beef pricing investigation requested by Members of Congress. The investigation was to determine if the present price reporting system--discussed in chapter 4--is capable of being manipulated and, if so, if it is being manipulated. This study is expected to be completed in the fall of 1978.

Although FTC has undertaken various economic studies involving the food industry, the commission is not organized along commodity lines, such as beef, pork, and has not looked specifically at beef marketing.

Normally, the Justice Department does not make public announcements of antitrust investigations which do not result in criminal indictments, the filing of a civil complaint, or administrative action by the Department. One recent

investigation, however, resulted in a Federal grand jury indictment of nearly all the major meat packing companies in the Los Angeles area on charges of engaging in price fixing tactics. Stiff fines were subsequently levied in July 1978 against most of the companies. (See p. 28.)

Market control remains a prominent issue

As discussed earlier packers appear to be obtaining pricing advantages through increased regional and local market shares. Packers and feedlots are merging, and P&SA believes this action can affect competition within the industry. Market power issues are not limited to activities within the packer segment, however.

Retailers have begun to give packers specifications for animal type, weight, quality, and trim. The impact of the retail chains' decisions is felt throughout the system as packers generally buy cattle for slaughter according to the retailers' specifications.

The concern over retailers' market power is evidenced by recent class action suits of cattlemen and feeders charging certain retailers with apportioning meat purchases and dividing marketing territories. (See app. IV for listing of recent lawsuits.)

At the time of our review, the beef marketing oversight agencies did not appear to be allaying the many concerns about the threat of new economic concentration in the beef industry.

ISSUES FOR CONSIDERATION

Some of the current issues of the beef industry clearly involve concern over market competitiveness and the impact market power/concentration may have on prices. Concentration ratios are one measure of competition, however, certain trends, such as vertical integration and increasing market power of retail chains, are apparent which may further affect the industry structure.

In this connection, these questions should be considered:

--Are certain segments of the beef industry exercising and extending undue market power and control over other segments? If so, how prevalent is the practice and what impact does it have on price? On other marketing segments? What action in addition to ongoing investigations, etc., should the responsible Federal agencies be taking to help further insure a competitive market?

--Should the Packers and Stockyards Act be amended to provide P&SA with authority over feedlot operations?

CHAPTER 4

PRICING PRACTICES AND PROBLEMS

Accurate and up-to-date sales information is an essential part of a truly competitive market system. But the current beef marketing system functions largely in an information vacuum. Worse, many in the industry, such as producers, feedlot owners, and market economists, believe that what information is available is often unusable and unreliable and open to manipulation through incomplete and false reporting. Inaccurate information could be contributing to the growing noncompetitive trends and litigation in the beef industry.

Economic power appears unequally divided in the beef industry. Producers claim that they have considerably less market power than packers and retailers. Producers have alleged in legal actions that

--retailers and packers effectively determine prices paid to producers for live cattle, producers have no choice but to accept these prices, and

--price information used by retailers and packers to determine these prices has been manipulated by the packers and retailers. (See app. IV.)

Because the integrity of the beef information system is essential in maintaining free market conditions in the beef industry, it is worthwhile to examine the current pricing system and the quality of the price information.

INFORMATION SOURCES--WHAT'S ACTUALLY AVAILABLE

There are three major sources of daily market information in the beef marketing system. The most widely used source is The National Provisioner's "Daily Market and News Service," commonly known as "The Yellow Sheet." The Yellow Sheet reports wholesale prices for such items as live cattle, beef carcasses, primal beef cuts, and beef variety meats. The Yellow Sheet reports that its news service reflects the level of the market at the close of the trading day, based on daily contacts with sellers, buyers, and brokers. The Yellow Sheet does not report sales volume and does not distinguish sales made between two packers from those made between packers and retailers. The failure to distinguish sales types and volumes has made the Yellow Sheet vulnerable to price manipulation charges.

The second source of information, "The Meat Sheet," provides information similar to Yellow Sheet information and also distinguishes sales reported between packers. Because the Meat Sheet has only been published since August 1974 it has not been widely accepted in the beef industry. Both the Yellow Sheet and the Meat Sheet are private publications, distributed on a paid circulation basis.

The third major source of daily market information is the Department of Agriculture "Market News." The Market News is a free service, providing information in its weekly publication and in daily prices over radio, television, and wire services.

Prices for the Market News are collected from livestock markets and some wholesale centers. The reported prices cover slaughter and feeder cattle, carcass meats, and primal wholesale cuts. Rather than reporting just single closing prices, as in the Yellow Sheet, USDA also reports estimated current day slaughter and weekly meat production as well as a range of prices.

The National Cattlemen's Association (NCA) publishes weekly market information. The NCA "Cattle Fax" provides current and long-term market information. According to NCA, the publication is to allow better management and marketing decisions. The newsletter reports some live and processed meat prices as well as market projections.

EVOLUTION OF CURRENT SYSTEM

Because of an increase in competition brought about by the consent decree (see p. 15), wholesale trade expanded during the 1920s. It then became apparent to packers that some means of price communication was necessary. As a result the then-President of The National Provisioner formed the Yellow Sheet. Pork prices were reported in 1923, and around World War II, beef prices were added. The Yellow Sheet reported prices collected at the large terminal markets. When most cattle were marketed through terminal markets, reported prices were based on auction market sales and were usually accurate. During the next few years, however, cattle marketing moved away from terminal markets and into local auction markets and direct selling. Today about 80 percent of the slaughter cattle in the United States are purchased directly from ranchers, farmer-feeders, or feedlots, with few cattle moving through terminals or auction markets.

The increase in direct sales has a serious impact on the availability of cattle prices. Unlike terminal and

auction market sales, prices paid in direct sales of livestock are not public information. This means producers, packers, retailers, and consumer researchers often lack the information necessary to accurately determine cattle values.

The system is further weakened because packers often determine direct purchase prices for cattle using percentages of the daily Yellow Sheet price. (The Yellow Sheet reports only a small part of the total meat transactions. See p. 25.) Cattlemen, who must deal with local packers or assume prohibitive transportation costs, are forced to accept packer prices. As will be shown later, the information used by these packers to establish prices may not reflect actual market values.

Packers and processors set their processed beef prices through open market trading or formula pricing. In open market trades, the parties negotiate prices based on supply and demand conditions. In formula pricing, however, the parties agree to a formula based on figures reported by a specific market information service, usually the Yellow Sheet. The price for a sale, for example, would be the Yellow Sheet price next Tuesday plus $1.50. Formula pricing is the prevalant means of setting prices in the industry.

It is interesting to note that the Yellow Sheet predominates in the setting of prices in the beef system, even though the Market News and the The Meat Sheet provide more information than The Yellow Sheet. The beef industry is highly traditional, however, and the Yellow Sheet has been accepted for many years as the price setting mechanism.

PRICE INFORMATION PROBLEMS

The current industry reliance on formula pricing has resulted in two major concerns: inadequate price information and the susceptibility of pricing information to manipulation.1/

Quality of information

Many producers and feedlot operators complain that Yellow Sheet prices are not useful in developing accurate price information as to cattle value. The problem apparently lies with the Yellow Sheet price collecting system.

1/For additional information on this and related subjects, see GAO report entitled "Marketing Meat: Are There any Impediments to Free Trade?," CED-77-81, June 6, 1977.

Because the Yellow Sheet purports to print only open market trades verified by both buyers and sellers, two problems are created. First, accurate and complete sales reporting is not mandatory, therefore, buyers and sellers may report only those prices they choose. Second, open market sales constitute only a small portion of all beef sales. About one quarter of all wholesale beef is traded on the open market, while the remainder is traded using formula pricing. Use of formula pricing is believed to be increasing.

Moreover, industry sources estimate the Yellow Sheet actually picks up and reports five percent or less of total meat transactions with the result that only a small percentage of U.S. beef sales sets the prices for almost all other beef sales. A major chain in the south which uses formula pricing, for example, never affects the Yellow Sheet quoted prices because the Yellow Sheet does not report such formula prices. In addition some of the largest chains in the United States do not report prices to the Yellow Sheet at all.

The quality of pricing information is further subject to question because many Yellow Sheet prices come from meat brokers at terminal markets and other trades outside the mainstream of transactions. Terminal market sales often involve poor quality animals and distress sales. These sales become a major basis for the meat prices reported to the Yellow Sheet, meaning that as a result, animals with reduced value are all that may be reported by the price news outlet. The high quality animals sold by feedlots directly to packing houses may often bypass the Yellow Sheet reporting system

The Yellow Sheet is primarily used for sales among packers, processors, and retailers. The entire industry may be susceptible to the sheet's influence, however, because it is used as a guide to prices paid all along the beef marketing chain.

Potential for manipulation

Meat industry sources have suggested several manipulation possibilities, including:

--Packer "A" sells 20 carloads of beef to a retail chain to be delivered to their central meat distribution center the following week in increments of five carloads a day. The price of the 20 carloads is to be based on the Yellow Sheet

price on Thursday of the shipping week. Then on Thursday afternoon of the shipping week, packer "A" calls packer "B" and buys two carloads at 1/2 cent per pound over the current days' reported market level. Packer "A" can now report this price as a closing transaction to the Yellow Sheet. The price the Yellow Sheet publishes for that Thursday could reflect this transaction by being 1/2 cent per pound higher. Thus packer "A" will have increased the price the retailer pays for all 20 carloads. Given an estimated 40,000 pounds per carload, the sales price of each carload could be increased by $200 for a total of $4,000.

--A packer and a processor negotiate a 15-carload transaction at 60 cents a pound, but the packer, with heavy sales orders scheduled that day at the Yellow Sheet price of 62 cents, does not want to lower the market just before the close. So the packer sells 10 carloads at 59 cents and the remaining 5 carloads at 62 cents. The payment is the same as if the 15 carloads had been sold at 60 cents, but this way the Yellow Sheet price stays high because it can be told that the last transaction was 62 cents.

--A packer will sell meat to a processor at less than the Yellow Sheet price on the condition that the lower price not be reported to the price information outlet.

By such methods, carefully manipulated sales could be determining prices paid for live cattle and wholesale meat throughout the beef system.

West coast pricing

West coast prices are not normally based on formulas. Industry sources have indicated that west coast beef prices are based on prices paid by a single retail chain since most other western packers and retailers follow this chain's lead. After this chain, which uses the offer-acceptance method of buying beef, accepts bids for the week, packing houses use this as a basis for establishing prices to other retailers and processors for the remainder of the week and early the following week. The potential then exists for setting and controlling prices on the west coast. Further, because the west coast is a beef-deficient area, beef raised on the west coast normally stays on the west coast and is supplemented

by other areas. A spokesman for the Yellow Sheet has stated that because California beef is actually outside the U.S. open market system, the Yellow Sheet does not report prices of beef sold in California.

LEGAL ACTION--CASES AGAINST PACKERS AND RETAILERS

In the past few years cattle producers have brought a number of civil actions against packers and retailers, challenging the validity of the pricing system and the price information mechanism. Most of the court cases were consolidated in the U.S. District Court for the Northern District of Texas. In re Beef Industry Antitrust Litigation, M.D.L., No. 248 (N.P. Tex. 1977.) (See app. IV.)

Producers and feeders who are plaintiffs in these antitrust actions charged that the retail chains

> "* * * have engaged * * * in an unlawful combination and conspiracy in unreasonable restraint of * * * interstate trade and commerce in cattle and fresh, frozen and processed beef, and have engaged * * * in an unlawful combination and conspiracy to monopolize * * * such trade and commerce in violation of * * * the Sherman Act (15 USC Section 1 and 2)."

The Federal judge presiding over this litigation decided to dismiss the cases against the retail chains in light of a recent Supreme Court decision.1/ Attorneys for several plaintiffs have already indicated, however, that they will appeal the judge's decision. In addition to the possible appeal of the Court's dismissal of the cases, proposed congressional legislation may overturn the Supreme Court decision 2/.

1/Illinois Brick Company Co. v. Illinois, 431 U.S. 720 (1977). The Court held that indirect purchasers in a marketing chain could not sue for damages, only direct purchasers could sue for damages under the Clayton Act (15 U.S.C. 15 (1976)).

2/Bills (S. 1874 and H.R. 8359), introduced July 15, 1977, would amend the Clayton Act to allow persons injured "directly or indirectly" to sue for damages. This amendment, if passed, would overturn Illinois Brick and would apply retroactively to actions pending on June 9, 1977--the date Illinois Brick was decided--and those filed thereafter.

Other suits brought against the major packers which were not dismissed allege the packers have agreed to

> "* * * manipulate the * * * prices of beef reported in the "Yellow Sheet", which in turn has been used as a basis for exacting unreasonably low prices for live cattle * * * (and) agree to quote substantially identical bids for live cattle * * *."

Pretrial hearings on the cases against the packers had not been held at the time of our review.

Legal actions have also been filed in other courts. In Southern California a Federal grand jury indicted most of the major meat packing companies in the Los Angeles area, 10 corporate officials and their trade association on charges of engaging in price-fixing tactics from 1965 until 1974. The indictment, which was based on a complaint filed by the Justice Department's Antitrust Division, charged that the defendants artifically increased and stabilized the prices of carcass beef sold to retailers and others. In July 1978 a Los Angeles Federal judge levied stiff fines--many of them $50,000--against most of the companies, which had pleaded no contest to the charges.

In Washington State, cattle feeders have charged local packers and retailers with conspiring

> " * * * to fix, manipulate, control, and regulate prices paid * * * for fed cattle * * *; (and) to fix, manipulate, control, and regulate prices charged to retail customers for beef * * *."

At the time of our review these court cases had not been decided.

POTENTIAL MARKET SOLUTIONS

Some marketing methods that could alleviate formula pricing and price manipulation problems are: electronic marketing systems, such as tele-auctions; a return to open market trading, perhaps safeguarded by Federal restrictions on formula pricing; forward contracting of cattle sales; or vertical integration.

Tele-auctions

In tele-auctions, producers or feedlot operators sell cattle through an automated process, such as a tele-terminal, telephone, telegraph, or closed circuit television system,

without moving the animals from their pens. Buyers connected by the nationwide or regional system then bid on the cattle. Tele-auctions have been tried in the United States with varying success and have been successfully used for hog sales in Ontario, Canada. The tele-auction system in Canada resulted in substantial savings in transportation, handling, and losses due to shrinkage and bruising.

A report on tele-auction systems prepared by a producer organization suggested that such systems could

--materially improve market competition and the bargaining position of the producer,

--result in savings of $38 to $60 per head,

--improve market performance by smoothing out gluts and shortages,

--improve accuracy of price and supply information, and

--reverse the present trend toward formula pricing and provide a truly competitive beef market.

Economists and industry sources have stated that a tele-auction system, perhaps in conjunction with a ban on formula pricing, would be effective in strengthening the competitiveness of the pricing system and would enhance information gathering.

But the tele-auction system also has disadvantages. A primary problem is that both buyers and sellers must agree to abide by the marketing system. Large packers may be unlikely, however, to voluntarily accept marketing systems which would decrease their bargaining power--a likely result of improved market information to the producer. A second problem is that the initial cost of developing and establishing a tele-auction system would be large, and problems of determining ownership of the system would exist. A third disadvantage is the inability to evaluate the animals in person.

Open market trading

Another potential solution is a return to open market trading, with possible restrictions on formula pricing. There would be considerable industry opposition to open market trading because of increased marketing costs and

reduced operational efficiency. However, it could improve pricing accuracy and effectiveness.

Other market alternatives

Other marketing alternatives suggested by industry sources include the following methods.

--Direct to-retail sale method. Feedlots would sell their cattle directly to retailers who would then have the animals custom slaughtered, thereby avoiding the packer marketing stage.

--Forward contracting system. Feeders and producers would join to provide uniform quality cattle to packers or retailers. Forward contracting would facilitate financing for the feeders and guarantee them set profits, although on a daily basis, total profits could be reduced.

--Vertically integrated marketing method. Feeders and producers would expedite marketing through ownership of other production chain levels. At the production level, for example, producing operations and feedlots would be jointly owned.

Each of the above methods is a means of reducing risk by predetermining a profit for cattle. Whether these methods would assure a more competitive market, however, is unclear.

USDA ACTION ENCOURAGES ELECTRONIC MARKETING

USDA has begun encouraging a nationwide computerized meat price reporting system that would be less vulnerable to price fixing changes. Efforts are centered at the USDA Agricultural Marketing Service. The agency will grant funds to States to devise practical approaches for furthering the electronic marketing of farm products, including meat. Persons or groups can also submit proposals for possible money grants. At the time of our study, the Agricultural Marketing Service was planning a symposium on various electronic marketing methods.

ISSUES FOR CONSIDERATION

The beef marketing system information process is not adequate for orderly, competitive marketing because it may be open to manipulation and may not reflect selling prices for cattle under truly competitive conditions. Under the

current marketing conditions, producers claim that retailers and packers have an unfair advantage. Several questions include:

--Should a national or regional marketing system, such as tele-auction, which would insure competitive marketing of live cattle and processed beef be instituted? If so, who should establish it? Should it be accompanied by a ban on formula pricing?

--Should a beef market information system, either public or private, which would provide accurate sales, price, and volume data on a daily basis, to all segments of the industry be established? by whom? If not, should reporting of cattle and beef sales under the current system be made mandatory? If reporting was made mandatory, who would receive and monitor the reports?

CHAPTER 5

BEEF SAFETY AND QUALITY

Consumers are vitally concerned with beef wholesomeness and palatability. Wholesomeness includes all aspects of safety and consumer health. Palatability generally refers to meat-eating qualities, such as tenderness and flavor.

The Federal Government is responsible for assuring that beef is wholesome and safe for human consumption so, USDA inspects beef to make certain it comes from healthy animals and is processed under sanitary conditions. The USDA Food Safety and Quality Service (FSQS) administers a program under the Meat Inspection Act (21 U.S.C. 601 et seq. (1976)) for preventing interstate shipment of meat products that are unwholesome, adulterated, or otherwise unfit for human consumption.

USDA also provides a service for grading beef carcasses for quality and yield. Because this service is paid for by packers and is a voluntary program to be used upon their request, all beef is not graded.

The Food and Drug Administration (FDA) is responsible for assuring that there are no potentially harmful residues in the meat eventually purchased by consumers. FDA also sees that animal feed additives are safe. Where animal drugs are used, FDA must also approve the safety of any drug residues in the food. FDA is responsible for setting tolerances for the residues, while FSQS does the actual testing of meat.

Whether these Federal agencies are really assuring beef wholesomeness is questionable. This chapter discusses

--meat inspection,

--feed additives,

--beef consumption and health aspects, and

--beef quality grading standards.

WHOLESOMENESS

USDA inspection

USDA has been inspecting beef at packing and processing facilities for years to assure that the product is safe for human consumption. The USDA inspection stamp indicates that

the meat came from healthy animals which were slaughtered and processed under sanitary conditions.

Because USDA does not inspect meat at retail, Federal inspection does not assure that the products are handled under sanitary conditions at retail stores. Consequently Federal standards do not assure that meat purchased by consumers has not become contaminated by retail storage and handling. Moreover, the USDA inspection stamp does not assure that the meat is free from harmful residues or that the products are beneficial to consumer health.

In this connection, there has been concern expressed by various groups within the beef industry, the Federal sector, and the consumer movement over the Federal Government role in assuring that beef is safe. Issues directly, or closely, related to inspection include establishment of microbial standards for fresh beef, use of cattle feed additives, and the nutritional value of beef.

Another related issue concerns toxic residues, such as pesticides and environmental contaminants in raw meat. We are currently reviewing Federal programs for regulating toxic residues, and the results are expected to be published later this year.

Microbial standards

Fresh beef, particularly ground beef, may contain a number of bacteria/micro-organisms. The presence of bacteria does not necessarily mean that the product is unwholesome as many of the organisms are merely harmless bacteria normally present in our environment. Because beef may also contain organisms which represent potential health hazards, however, microbiology may be considered one aspect of food safety.

There has been much discussion recently about establishing microbiological standards for fresh meat. A few States and cities have adopted safety standards because they believe them to be in the best interest of consumers. It has been reported that the Oregon Department of Agriculture, for example, established statewide bacterial standards for meat and meat products in 1971 and tightened them in 1973, believing standards would

--improve sanitation and handling of these products in retail markets,

--lower the number of bacteria in the products sold to consumers,

--reduce risk to public health which was thought by some persons to exist or potentially exist, and

--improve overall quality of these commodities available to Oregon consumers.

The Oregon Department of Agriculture subsequently conducted a study of its program, however, and in early 1977 its Microbiological Regulations Review Committee concluded

--there was no evidence to show the standards resulted in less risk of meat product foodborne disease,

--there was no evidence to show there was any significant change in the number of bacteria found in meat and meat products,

--there probably was no significant change in quality, and

--the cost was not justified because reduction in risk to public health was not demonstrated.

The committee voted to recommend that the standards be eliminated and concluded there was a need for training and education of food handlers and consumers.

There are no USDA microbiological standards for retail beef cuts or ground beef. One FSQS official noted that this area is very complicated and only with a considerable amount of research and sampling would the agency eventually propose some guidelines. In fact, two Federal agencies believe that curbing bacterial growth problems is best handled with increased consumer education about meat handling. One agency, the Center for Disease Control (U.S. Public Health Service), has recommended that cities and States establish food handling educational programs. USDA concurs with this approach, believing consumer and food service personnel education to be a more useful means for controlling these health hazards.

FDA also develops and supports vocational education and public information programs relating to food safety, including the promotion of sanitary training programs for food service and retail food managers.

The controversial use of feed additives

DES: a carcinogen

DES (diethylstilbestrol) is a synthetic drug which stimulates growth and increases feed conversion efficiency. Cattle feeders have found that the use of the drug saves feed grain, is less costly, and is more effective than other growth stimulants.

Use of DES became controversial when scientists established that it was a carcinogen, a substance causing cancer in test animals. The "Delaney Clause," a 1958 amendment to the Food, Drug and Cosmetic Act (21 U.S.C. 301, 348(a)3 (1976)) precluded the use of additives linked to cancer. In 1962, however, the Congress enacted an exception to the law permitting the continued use of DES, provided drug residues could not be detected in edible livestock tissues.

To insure that such residues do not appear, FDA, as part of its drug-approval process, includes a DES withdrawal period. This withdrawal period was expected to allow the drug to clear the animals' systems before slaughter. The drug was temporarily banned in 1973, when improved analysis methods found traces of DES in calves liver--an edible organ. The FDA then banned use of the additive even though no evidence of the drug was ever detected in muscle or fat tissues. FDA was subsequently required to lift its ban, however, after a Federal appellate court ruled that FDA had not provided drug manufacturers with opportunity for hearings. Hess & Clark v. FDA, 495 F.2d 975 (D.C. Cir. 1974.)

DES can still be used today as a growth hormone. Although withdrawal periods have been extended to protect consumers, FDA is still concerned. The FDA Commissioner continues to press for a ban on the drug. In 1977 FDA held hearings on the risks of using DES as a growth agent. It is conceivable that another ban on DES will result from these hearings.

Antibiotics

Another health concern is the role of antibiotics in animal feeds. Antibiotics are used to promote growth and prevent or control animal diseases, but antibiotics used in animal feed--such as penicillin and tetracycline--are also used in treating humans. FDA is concerned that the use of certain antibiotics in animal feed may lead to the development of antibiotic-resistant bacteria in humans, reducing the effectiveness of these drugs in treating human diseases.

Although Great Britain restricted the use of penicillin and tetracyclines in animal feeds in 1971, it was not until 1977 that FDA proposed restrictions on the use of these antibiotics in feed.1/

The FDA action has stirred considerable controversy. Cattle producers and drug manufacturers contend that the effect on humans of antibiotics in animal feed has not been conclusively established, and several Government studies are underway. Until the results of these studies are known, however, it appears that the use of antibiotics in animal feeds will likely remain controversial.

Beef consumption--health and nutritional concerns

Within the last few years, much information on the value of meat in our diets has been compiled. Red meat, which is comparatively high in saturated fats and cholesterol, has been associated with a number of major health problems, including heart disease, stroke, and cancer. Because meats account for about 40 percent of the total fat content of American adults' diets, the link between heart disease and meat consumption is a particular concern.

This is not a one-sided issue. Although some nutritionists believe that eating leaner beef would improve health, others argue that the link between eating beef and experiencing health problems has not been substantiated. These nutritionists note that beef is a major protein source.

Before feedlots were developed, the beef that Americans ate came from range-fed cattle. The beef was generally tough and stringy and only contained a small amount of saturated fat. Because large numbers of cattle came off ranges in the fall and had nowhere to go except to slaughterhouses, cattle marketing was seasonal. There was plenty of beef for a few months and then consumers had to wait until the next season. As farmers began to raise more grain than they could use, they found they could put some of the range cattle

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1/This action was in response to recommendations included in our report entitled "Need to Establish Safety and Effectiveness of Antibiotics Used in Animal Feeds" (HRD-77-81, June 27, 1977). At the time of our review, FDA had proposed restrictions on the use of penicillin in August 1977 and on certain tetracyclines in October 1977.

into pens in the fall and feed them on roughage and excess grain. Consumers could then get better beef for longer periods. It was almost by accident, therefore, that consumers realized that beef from the farmer's pens was more flavorful and more tender than range-fed beef.

As cattle feeders began raising cattle on grain supplies, grain feeding, which increases marbling,1/ became an integral part of the beef marketing system. Today Americans eat much more beef, and this beef is marbled with saturated fats. This consumer preference for well-marbled meat has encouraged the production of "fat" cattle, which are fed on grain diets. The meat of these animals becomes marbled, with strings of fat developing between the muscle fibers. Marbled beef is tenderer and more flavorful than the meat of nongrain-fed animals because it is more fatty.

The increasing concern over the relationship between diet and health problems prompted the Senate Select Committee on Nutrition and Human Needs to suggest less animal fat consumption by choosing leaner meats, poultry, and fish to reduce saturated fat intake.2/ The Senate Select Committee also recognized, however, that there is inconclusive scientific evidence of altered diets providing protection from heart disease and stroke, and that much controversy still exists over the value of beef in our diets.

PALATABILITY AND QUALITY OF BEEF

Meat grading provides uniform standards for buying and selling livestock and meat and facilitates the wholesale exchange of meat. But packers, producers, and consumers are concerned that Federal grading standards do not satisfy their originally intended purpose. In this section we will examine these concerns to assess the usefulness of the current grading system.

1/Marbling refers to the flecks of fat within the lean muscle tissue of beef. Generally associated with the juiciness, tenderness, and flavor of beef, the degree of marbling is evaluated in the carcass ribeye, between the 12th and 13th ribs.

2/Senate Select Committee on Nutrition and Human Needs report entitled "Dietary Goals for the United States," Second Edition, December 1977.

Establishment of grading standards

Beef grading standards were actually established over 50 years ago at the urging of the beef industry. The industry hoped grading would increase public confidence in beef, thereby contributing to consumption. But for reasons which will be explored below, the effect of the grading standards has been mixed.

Existing quality grades (Prime, Choice, Good, etc.) are designed to measure marbling in the lean, an indication of tenderness, juiciness, and flavor. Yield grades, on the other hand, reflect the percentage of meat that can be derived from carcasses for retail cuts. Both the quality and yield grades determine the dollar values of the carcasses.

Major changes in the grading structure occurred in 1976:

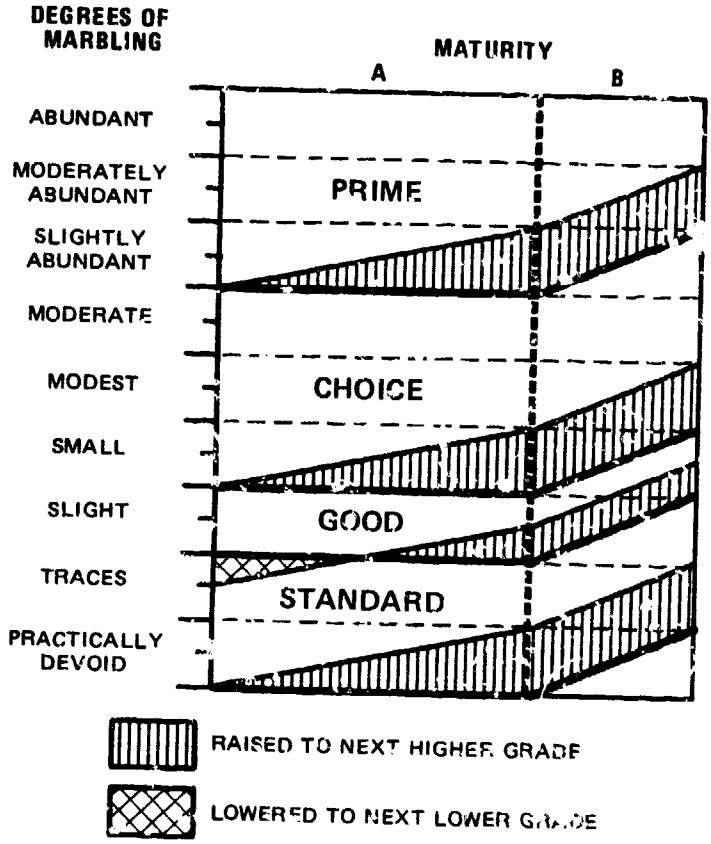
--USDA stopped judging quality by the animal's shape or appearance.

--Yield grading became mandatory, rather than voluntary, whenever grading was used.

--Quality grading standards were revised to allow less marbling in each grade.

The revisions reduced the amount of marbling in the beef necessary to qualify for a higher USDA grade, as shown by the chart on the following page.

RELATIONSHIP BETWEEN MARBLING, MATURITY a/ AND QUALITY GRADE



The change in grading standards has apparently reduced the proportion of excessively fat carcasses.

The grading revisions not only reduced the fat content necessary to qualify for Choice or higher grade but also widened these categories. As a result about 90 percent of all beef reflecting the USDA grade now falls in the Choice or higher category--an increase of [illegible] percent from before. There are those who argue that consumers, while undoubtedly benefitting from the consumption of leaner beef, are actually getting lower quality cuts at high quality beef prices.

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a/The "A" maturity group includes animals from about 9 to 30 months and the "B" group from about 30 to 42 months.

All beef is not graded

USDA provides beef grading services to packers on a voluntary, reimbursable basis. In 1977 packers spent about $12.7 million for beef grading services. Only 56.5 percent of all beef marketed, however, actually reflects the USDA grade.

Some retailers and packers believe store, chain, or brand reputation can build as much consumer confidence as Government grading standards. Chain stores often sell meat under their own house brand. A major western supermarket chain, for example, sells beef under its house brand as "bonded meat." This beef has been procured by the chain to meet its specifications, but it has not been stamped with the USDA grade. Other supermarket chains also merchandise under their own labels.

In addition, packers have found that it can be economically advantageous to market carcasses without USDA grade stamps. Rather than sell meat at a quality grade below Choice, packers will frequently instruct Federal graders not to mark the grade on any carcass that is not at least Choice grade, and the grader complies with their request. This procedure is allowed under the voluntary program.

Is the beef grading system useful?

The National Commission on Food Marketing recommended mandatory retail level grading standards in 1966. Proponents of these standards believed mandatory grading would reduce prices by eliminating costly advertising. They also hoped mandatory grading would foster competition by strengthening the position of small firms in relation to large chain stores. One "Grade A" product. the proponents reasoned, would be as good as another, regardless of brand name. Opponents of mandatory grading contended that the proposal would be both costly and unworkable. The Government could not possibly devise quality grades, they argued, to coincide with the diverse tastes of millions of consumers.

Even if mandatory grading were instituted, it is questionable whether consumers would benefit because the many USDA grades can be confusing. A June 1977 report, "Perspectives on Federal Retail Food Grading," prepared by the congressional Office of Technology Assessment (OTA), showed that consumers are easily confused by the many USDA grades. The Department, for example, grades processed food products with a letter symbol, but it generally uses a number system for fresh fruits and vegetables. Further, it

applies such terms as Prime, Choice or Good to most fresh red meat. But even these labels vary among the different types of red meat.

Although the current USDA grading standards may facilitate the wholesale exchange of meat, it seems to be of questionable help to consumers in assessing retail cuts. When consumers are confronted with their weekly purchasing decisions, they are only partially assisted by the USDA grading process. Some proponents say that quality grading should reflect product wholesomeness and nutritive value, as well as tenderness.1/

USDA proposed changes to meat grading

In January 1978 USDA proposed certain changes to its regulations to make meat grading more accurate and uniform and to provide consumers with more accurate information. Currently, beef does not have to be graded at all, and ungraded meat may be offered for sale as being of a higher quality than it actually is. USDA says the proposed changes could eliminate such problems. Briefly, the USDA proposals are:

--Grade meat only in the plant where it is slaughtered and only as whole carcasses or sides. USDA believes this procedure will eliminate the opportunities for fraud and error that occur when meat is graded after being cut.

--Allow for a standard chill time for the marbling to become visible by requiring that a minimum of 30 minutes elapse between ribbing and grading of carcasses. USDA believes this will end the practice of packers bringing carcasses back several times in hopes of getting a higher grade.

--Require that kidney, pelvic, and heart fat be removed from all carcasses before grading to improve the accuracy of yield grading. This would result in uniform conditions for grading beef in all plants.

1/Our report entitled "Department of Agriculture's Beef Grading: Accuracy and Uniformity Need to be Improved" (CED-78-141, July 21, 1978), deals with this subject in greater detail.

--Mark and label all meat sold at retail. Both graded and ungraded meat would have to be labeled as such through the entire marketing chain to final consumer purchase. Meats not graded would be marked "U.S. Ungraded." USDA believes this practice would insure that producers would be paid fairly for cattle they raise and that consumers would pay fair amounts for their purchases.

USDA believes these grading changes are necessary because of wide-spread practices by retailers and others that confuse consumers as to the quality and relative value of beef and other meats.

In the spring of 1978, USDA was receiving comments on its proposals to determine what the effects of the changes will be on large and small companies, what the tradeoffs are, and what the associated costs will be. The long range effects of feeding patterns on prices, and on the grading system itself, may be difficult to assess and will likely be controversial.

ISSUES FOR CONSIDERATION

The value of beef as a nutritious and wholesome product has generated considerable discussion, and several questions remain. We believe the following are outstanding issues:

--Are microbial standards necessary or practical at retail? If so, should the Federal Government establish and enforce these standards?

--Should increased attention be placed on reducing risks to health through proper storage, handling, and preparation of meat products?

--Should FDA automatically ban feed additives whenever there are indications of negative effects on human health?

--Is information on the value of beef in our diets being effectively communicated to consumers? If not, how involved should the Federal Government become in assuring that consumers are aware of the benefits and risks of eating beef?

CHAPTER 6

PROCESSING AND MERCHANDISING TRENDS

Beef merchandising was relatively simple for many years. Carcasses were cut up by local butchers according to what consumers wanted. Some unwrapped meat was displayed in retail counters. But important processing and merchandising changes began taking place in the 1950s when chain stores started using meat and produce as image builders. Retail chains expanded their centralized facilities to include processing of carcasses for subsequent delivery to retail butchers. Also, major packers began processing carcasses into vacuum-packaged "boxed beef" for delivery to retail stores. Now the marketing system is considering other innovations, such as frozen beef, mechanically processed meat, hot-boned beef, and various methods of beef tenderization. These may become the new trends in processing and merchandising.

FROZEN BEEF

Although consumers have generally accepted frozen poultry and fish products, they have persistently resisted purchasing frozen beef. Public reluctance to purchase frozen beef apparently stems from strong suspicion over product integrity, from a lack of information about product improvements, and possibly from concern over power brownouts which would affect freezer operation. USDA discovered in a survey conducted in the late 1960s that, while consumers regularly froze fresh meat, they overwhelmingly shunned prefrozen meats.1/ The USDA survey also discovered that consumers were skeptical about the quality of the products and were concerned about how long beef had been frozen. In fact, before recent technological innovations, frozen meats were vulnerable to dehydration and freezer burn and had a tendency to lose their color and natural flavor. The type of package they were wrapped in made it difficult for consumers to evaluate the quality of the meat. Moreover, shelf life was often too limited to allow for wide geographic distribution. Recent advances have resolved some of these concerns.

1/Meat frozen at home will keep for only a few months, while prefrozen meat, quick frozen at -60 degrees and maintained at 0 degrees, will keep up to 1 year, depending on the type of cut.

A recent USDA study indicated that frozen beef would cost only about 2 cents more per retail pound than fresh beef, assuming both were cut in centralized facilities. The study concluded that if consumers were persuaded to switch to frozen beef, the advantages could make marketing prefrozen beef preferable to marketing fresh beef.

Some large food retailers have already ventured into the frozen meat market but so far with limited success. One large organization says it has hesitated to market frozen beef simply because it fears the consumer has been conditioned against accepting frozen meat. Another retailing chain found that although both the product and its package proved acceptable, costs could not be brought down to competitive levels.

In some cases, on the other hand, new freezing and packaging techniques have been successful. In a 16-week test at one major California supermarket, frozen meat was offered for sale next to fresh meat. Over half of those interviewed had bought the frozen meat. Over 90 percent of the frozen meat purchasers claimed the frozen meat quality was equal or superior to fresh meat.

Certain troubling questions can arise from widespread acceptance of frozen beef.

--Will the innovation of frozen beef increase the possibility of any one marketing segment controlling the market?

--If one segment should elect to store frozen beef in large quantities to withhold it from the market, how would the availability of beef in the marketplace be affected?

--Would such market control inevitably result in higher prices to consumers?

It would appear that these questions must be adequately resolved before frozen beef becomes a widely accepted product.

MECHANICALLY PROCESSED MEAT

It has been estimated that grinding bone, called mechanical deboning in the industry, would add 1 billion pounds (from beef, lamb, pork) a year to the Nation's food supply. Most of this food would be residual meat recovered from beef carcasses.

Meat loss typically occurs under traditional hand-deboning methods when packing house employees attempt to cut the

meat away from neckbones, ribs, and backbones. Because of the labor expense, most residual meat attached to these bones has been sold for inedible uses. With the introduction of mechanical deboning, however, the bone and residual attached meat can be ground, sieved to remove bone chips, then used in fabricated meat products such as lunch meats.

The mechanical deboning process is not new. It has been used profitably in the poultry industry for the past decade, retaining millions of pounds of poultry for use in processed products. It was not until several years ago that red meat deboning equipment was developed enough to also be considered for USDA approval.

On April 27, 1976, USDA published proposed regulations on the definition and use of mechanically deboned meat. On September 10, 1976, a Federal District Court ruled that until certain health questions raised by consumers about the contents of mechanically deboned meat had been answered, the court would view this meat as an adulterated product. Community Inspection Institute v. Butz, 420 F Supp. 751 (D.C.D.C. 1976.) The Federal judge temporarily enjoined USDA from enforcing its proposed regulations.

One major consumer concern is that meat processed in this way contains bone chips. USDA does not consider this a problem because researchers found that the bone was an undetectable particle size. UDSA researchers emphasized that mechanically deboned chicken has been used in such products as hot dogs, sausages, and lunch meat for about 10 years without public objection. Further, until the court ruling about 1.6 million pounds of this mechanically processed meat were being produced each week.

Another concern is whether calcium and calcium/phosphorus in this meat contributes to health problems. Some nutritionists contend that the additional calcium and phosphorus in processed meat may even be beneficial in remedying possible calcium deficiencies in American diets. One nutritionist even suggested that the fresh crushed bone with its calcium and phosphorus nutrients be added back to meat. This idea was rejected by USDA because of its impracticality and expense.

To evaluate the questions raised about processing meat in this manner, a group of scientists was formed with representives of the Food and Drug Administration, the Veterans Administration, the National Institutes of Health, and USDA. The select panel found that mechanically deboned meat generally presented no health hazards to adults or children. But the panel also agreed that food products containing mechani-

cally deboned meat should be so labeled in the package ingredient statements.

In June 1978, USDA issued revised regulations on the use of mechanically deboned meat. These regulations require that all products containing this type of meat (1) be prominently labeled with the words "mechanically processed (species) product," (2) be restricted to 20 percent of the meat in the product, and (3) not be allowed in baby food. The label must also carry the phrase "contains up to____percent powdered bone." These regulations became effective July 20, 1978.

HOT-BONED BEEF

Hot-boning is an innovative approach to beef extraction which could bring significant changes to beef slaughtering, processing, and distribution. This process could lead to economies in the use of energy.

Packing houses currently use one of two methods in breaking the carcass: carcasses are either cut into major segments for further processing, or the meat is stripped from skeletons that hang from the rails. Both methods require a chill period. Under the hot-boning process, packers remove meat from the carcass shortly after slaughter, when it is still warm and jelly-like in texture. The beef would then be placed in molds for shaping and chilling. Hot-boned beef requires only a few hours of chill before cutting.

Potential advantages of the hot-boning process include

--reduction of energy requirements for refrigeration,

--reduction in cooler space requirements up to 80 percent,

--reduction in meat shrinkage, and

--improvement in meat sanitation and shelf life.

Of course, this new procedure is not without potential disadvantages. Current methods of quality and yield grading, based on inspection of carcasses after cooling, may not function well with the hot-boning process. Also, special handling of hot cuts may be required to insure attractive, marketable products and this may increase labor, material, and equipment costs.

If widely adopted, the hot-boning process could bring significant changes to beef slaughtering, processing, and distribution. Research indicates that hot processing is feasible and, even though not fully developed at this time, may ultimately affect significant direct and indirect energy economies in beef marketing.

BEEF TENDERNESS

American consumers have been conditioned to judge the palatability of meat by its tenderness and flavor so, the industry is experimenting with several beef tenderization methods.

Mechanical tenderizers--These machines contain thin stainless steel blades that penetrate the meat, cutting the muscle and connective tissues to tenderize the cuts. Studies of mechanical tenderization show that this process has little effect on weight loss or appearance and does not change flavor, juiciness, or the palatability of the cooked meat. There is concern, however, that the cutting blades may transmit bacteria from the meat surface to the center.

Enzymes--One major beef processor devised and patented a technique for injecting enzymes into the bloodstream of cattle before slaughter. Another company manufacturing enzymes recommends that both mechanical and enzyme tenderizing be done concurrently. Processors have recently discovered that the lower priced, generally tougher beef can be made more palatable if enzyme tenderizers are used.

Conditioning--Another tenderizing process developed recently in New Zealand and tested successfully in Australia and the United States calls for cooling the beef carcasses in stages. Tests show that this process reduces the toughening that results from quick chilling. Beef conditioning would require more stringent hygienic practices to control bacterial growth.

Electrical stimulation--Still another tenderizing method under study is the electrical stimulation of beef shortly after slaughter. Studies conducted in Texas indicated that lectrical stimulation before chilling increases tenderness ratings by 12 to 55 percent and can be accomplished rapidly and inexpensively with little adverse effect.

Some beef scientists have suggested that carcasses which have undergone one of the recognized tenderization procedures be eligible to receive a grade at least one step higher than would be indicated by the USDA quality grading criteria. Further, if technologies are developed so all beef can be uniformly tenderized, this change would have a definite impact on the current grading system.

ISSUES FOR CONSIDERATION

Because the industry is now on the verge of significant innovations in beef processing and marketing, the following questions should be considered:

--Could the widespread acceptability of frozen meat give industry middlemen segments added power through control of product inventories? Would such control result in higher prices to consumers? If so, what significance will this have for the responsible Federal agencies?

--What effect will tenderized beef and hot boned beef products have on USDA grading and safety standards? Should the standards be revised to accommodate these innovations?

--What impact will these innovations have on consumer acceptance and prices?

CHAPTER 7

IMPORTS AND EXPORTS

Cattlemen were losing money in recent years. Some cattlemen believe that imports were a major cause. They point out that in 1976 over 2 billion pounds of imported beef competed with their domestic beef, while minimal amounts of beef were exported in return. In this section we explore the following questions: How does imported beef affect the domestic market? Would the elimination of imports actually benefit the beef industry? Why is more American beef not exported?

IMPORTS: IMPACT ON THE DOMESTIC MARKET

Fed cattle raised in the United States are different from cattle raised elsewhere. These cattle are feedlot fattened, because American consumers prefer the marbled meat which is juicy, tender, and more flavorful.

The majority of imported beef is shipped to the United States in a boneless, frozen form. This imported lean beef is mixed with fat and trimmings from fed cattle carcasses to make hamburger. Domestic lean beef, however, is also mixed with fat and trimmings to create hamburger. As a result, imported frozen beef competes with domestic lean beef in the ground beef market. This competition is important because an increasing percentage of consumer beef purchases are in the form of ground beef.

Producer concerns

Producers have traditionally blamed imports for depressed domestic prices. As prices drop producers complain about the influx of foreign meat. The Meat Import Act of 1964 (19 U.S.C. 1202, Schedule 1, pt. 2 (1976)), was orginally passed in response to such complaints. The act establishes quotas for imported beef, except for canned and other preserved beef products.1/ In 1977, for example, the beef quota imposed

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1/One exclusion to the beef import quotas was found to be a loophole and has recently been revised. Beef passing through the free trade zone of Mayaquez, Puerto Rico, for processing was not being included in the importing countries' annual quota. In 1976 more than 56 million pounds of beef from Australia and New Zealand entered the United States in this manner through Mayaquez. But as of 1977, meat imported through this zone is now included in the importing countries' annual quota.

under the act was about 1.3 billion pounds. Beef exceeding the imposed quota can still be sent to the United States but must be placed in storage until the following year.

The passage of the act, however, failed to alleviate producer concerns that beef imports were hurting their operations. In 1977 cattlemen asked the International Trade Commission (ITC) to cut back quotas, hike tariffs, and revise the meat import law to protect domestic supplies. In a September 1977 report, however, the Commission effectively rejected the notion that imports injure the domestic beef market, concluding

> "On the basis of the information obtained in this investigation, we have determined that imports are not a substantial cause of serious injury, or the threat thereof, to the domestic industry * * *."

The Commission found, in fact, that in 1974, a year when imports declined sharply while domestic production increased, prices paid to farmers were the worst in recent years. ITC had discovered that beef imports do not threaten producers' chief products, choice, feedlot-ready steers or heifers. Most imported beef does compete, however, with the leaner cow, bull, and stag meat.1/ Despite the competition, ITC found that as steer prices declined from 1975 to 1976, domestic cow prices rose and have continued firm despite beef imports.

Cattle producers want to increase demand for domestic beef by halting beef imports. Suppose that cattlemen's wishes were granted and beef imports were eliminated altogether. Undoubtedly, producers would benefit, but how would consumers fare? One leading market analyst believes reducing imports would raise cattle production but would also contribute to higher retail prices. Although producer sales would increase by an estimated $1.4 billion annually if imports were totally eliminated, consumer costs would almost triple--to $3.5 billion. One recent study revealed that the elimination of all imports would force processed beef prices up by almost 50 percent.

1/Bulls and stags represent an insignificant percentage of U.S. slaughter. On the other hand, cows account for about one-fourth of total slaughter.

Legislation to change import quotas on foreign beef

Under existing law beef import quotas are determined by a complex formula which is procyclical. This formula calls for the amount of beef imported by the United States to vary each year, depending on the amount of U.S. produced beef. When U.S. beef production is high, more foreign beef is allowed in than when U.S. production is low or dropping.

Recent proposed legislation (H.R. 5052) sponsored by Senator Lloyd Bentsen would reverse the system so that imports would be allowed to increase when U.S. production is low or dropping and imports would be reduced when U.S. production is high. Supporters of this legislation indicate that this counter-cyclical approach would stabilize the market, level out the boom-and-bust cycle of producers, and benefit both consumers and cattlemen. The Senate approved this legislation on May 5, 1978.

EXPORTS

The export market for U.S. beef is small. U.S. exports came to just 90 million pounds in 1976--a miniscule three-tenths of a percent of domestic beef production. Some problems the U.S. exporter faces are considered traditional trade obstacles--foreign tariffs, restrictions, and government subsidies. But these restrictions are only part of the reason why the U.S. beef export market is so small. U.S. packers have historically viewed foreign markets as markets primarily for their byproducts--odds and ends of production.1/ Actual cuts of beef, on the other hand, are difficult to sell overseas. American beef is fatter, and foreign consumers have not been exposed to marbled meat.

ISSUES FOR CONSIDERATION

No matter how much producers may favor increased import restrictions, American consumers are generally opposed to actions resulting in higher retail beef prices. On the other hand there have been few U.S. beef exports.

The President's Special Trade Representative believes that expanding the export market would eventually benefit

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1/Tallow, hide, and fur exports exceeded beef exports by 4 to 1 in 1976.

cattle producers more than reducing imports. The Meat Export Federation was organized in 1976 in the hope that increased meat exports would ease the effects of price cycles on producers. This organization will attempt to solve current export problems by improving the image of U.S. beef abroad while attempting to ease foreign trade restrictions. Perhaps this measure will eventually help resolve the cattlemen's export-import dilemma. In this connection, the following questions should be considered:

--Would a counter-cyclical beef import formula reduce meat imports below current levels, and possibly lead to an increase in trade protection in other countries?

--In addition to Meat Export Federation efforts, what other actions could be taken to expand beef sales to foreign countries? Who should be taking these actions?

CHAPTER 8

THE FUTURES MARKET

The live cattle futures market is a controversial subject in the beef marketing system.1/ Proponents of futures extoll the market as a means to minimize price risks, stabilize the volatile cattle market, and increase the dissemination of price information. Opponents, on the other hand, attack the futures market as a speculators' tool which is largely responsible for beef price fluctuations. Some cattlemen have suggested the elimination of trade in cattle futures. Yet in spite of the controversy, cattle futures are big business. In the fiscal year ended June 30, 1976, 2.7 million cattle futures contracts worth $45.3 billion were recorded.

This section discusses

--live cattle futures and how are they used and

--industry objections to the futures market.

LIVE CATTLE FUTURES

The problems in the futures market are difficult to understand without some knowledge of how the market is used. A futures contract is an agreement to buy or sell a particular commodity for future delivery. Two kinds of live cattle futures are presently traded: feeder cattle contracts and live (ready for slaughter) cattle contracts.

Cattle futures contracts are currently traded on the Chicago Mercantile Exchange (CME). The Mid-America Commodity Exchange will likely begin trading this fall. The Commodity Futures Trading Commission (CFTC), an independent agency, has regulatory oversight responsibility. The Commission is charged with protecting participants against abusive trade practices, fraud, and deceit.

1/The concerns discussed in this chapter should not be construed as being peculiar to cattle futures as some problems may also be characteristic of other commodity futures.

How futures are used

Cattlemen can use the futures market as insurance to reduce the risk of cash market price changes. Typically, cattle are sold for immediate cash payment and delivery. A cattleman, however, has no way of knowing where the market will be by the time he is ready to sell his cattle. The futures market lets cattlemen establish the prices they will ultimately receive for their products in advance.

Two kinds of traders with differing goals use the futures market: hedgers and speculators. Hedgers use the futures market to "lock in" the prices they will eventually pay or receive for cattle. By locking themselves into future prices, these hedgers insure themselves against unfavorable cash market price changes. For example:

--Producers can insure prices on sales of feeder cattle to feedlots.

--Feeders can lock in both feeder cattle and slaughter cattle prices and insure feed prices by buying grain futures.

--Packers can use futures to insure their purchase prices of cattle for slaughter.

The disadvantage to hedgers, of course, is that the futures also eliminate potential gains from favorable price movements.

The other trading group, speculators, plays a different role in the operation of the futures market. Unlike hedgers, speculators do not use the futures as a substitute for a cash market transaction. Instead, they trade futures, hoping to make money on price movements. In addition, speculators serve as customers, providing a market which permits hedgers to buy or sell at any time.

PROBLEMS WITH LIVE CATTLE FUTURES

Contract performance and market operation problems have resulted from use of the futures market.

Contract performance

--Delivery. In reality few futures contracts are ever fulfilled by actual delivery of the cattle. Hedgers will usually only deliver on contracts if the current local cash market prices for cattle are depressed. Otherwise, they will close out their futures position and sell their cattle locally.

Deliveries are allowed only every other month, however, and cattlemen have problems hedging cattle that come ready for market in nondelivery months. According to a CFTC economist, the addition of more delivery months could solve this problem. CME has attempted to alleviate this problem by adding January as a delivery month beginning in 1978.

--Redeliveries. In redeliveries, the same group of cattle received on one contract is used to meet delivery requirements on another contract. The process provides easy resale through the futures market if the buyers decide they do not want the products. But producers say that redeliveries should be banned because they reduce demand for cattle and temporarily depress cash market prices. Some redeliveries are neither publicly identified nor reported. This failure to report cattle redeliveries leads one to believe that a deceptively large supply of cattle is available for sale at a particular time. As a corrective measure, CME now requires the reporting of cattle redeliveries in order to eliminate the danger of inaccurate supply reports.

--Grading.1/ Once animals reach their delivery points, they are graded live by USDA. USDA is given 24 hours' notice that cattle will be delivered for grading. This short notice period has led the Department to complain that it is often unable to have sufficient personnel available for grading. USDA would like a 48-hour predelivery notice period but cattle sellers say a 2-day notice period would put them at a

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1/The USDA Market News Service performs a grading service to determine the acceptability of the livestock to be delivered. This grading of live cattle provides detailed specifications of the commodity and is a basic requirement to successful futures trading. Grading of the live animals is designed to facilitate deliveries only and the grade does not follow animals once they are slaughtered. This live grading should not be confused with grading of carcasses discussed on p. 38.

disadvantage, given the cash market's unpredictable fluctuations. At the time of our study, CME was considering ways to alleviate this problem.

Market problems

Live animal futures were initiated to provide price insurance, stabilization, and trend indications and to encourage standardization and quality control. The many complaints from cattlemen, however, suggest that the futures market may have fallen short of these goals. The Iowa Cattlemen's Associations and the Wisconsin Cattlemen's Association have requested indepth studies of the futures market. In addition some Iowa cattlemen have called for the elimination of cattle futures trading.

Some producers have complained that futures market prices adversely affect cash market prices. While the futures market impact is unclear, CFTC and CME officials do not believe the futures market causes changes in the price levels of cattle. According to these officials, cash price volatility is caused by factors other than the futures market. Some economists conclude that too many variables exist to pinpoint the futures market as a cause of cash market volatility.

Some cattlemen believe speculators control cattle prices through control of the futures market. One CFTC official agreed that the role of speculators warrants additional study. One CME official stressed, however, that without speculators, hedgers would be unable to buy or sell contracts.

Industry sources have suggested that large packers unduly influence the futures market. These suggestions occur even though the CFTC daily surveillance of the futures market apparently has not shown indications of packer manipulation.

THE MISUNDERSTOOD MARKET

CFTC and CME officials say that these cattlemen neither grasp the mechanics of the futures market nor appreciate its advantages. They point out that the futures market is an accurate price prediction mechanism only in that it reflects that day's price information. Prices will change based on the next day's information. Producers' reactions to futures prices change supply and demand balances, thus limiting the degree that the futures market can be used to form accurate price predictions. Therefore, unless individual farmers

hedge by locking in prices, the market offers them no particular advantage. The market does not have to be a reliable predictor of cash prices to provide mechanisms by which cattle feeders can reduce risk.

ISSUES FOR CONSIDERATION

While the futures market benefits hedgers by providing some insurance against price fluctuations, it arouses the cattlemen. To satisfy producers and others that the cattle futures market is not detrimental to their business activities, the following questions need to be addressed:

--Do futures market prices adversely affect cash prices for purchases and sales of live cattle? If so, can safeguards be implemented to alleviate this impact? If not, what action should be taken to insure producers and others that futures market prices do not adversely affect cash prices?

--Do packers, market speculators, or other groups have an influence on the futures market to the detriment of cattlemen and consumers? If so, what action could be taken to prevent this?

CHAPTER 9

TRANSPORTATION AND SHIPMENT

Transporting billions of pounds of beef is costly. Unfortunately, no one really knows how high these transportation costs are. The beef industry relies almost exclusively on trucks to transport products, therefore, the entire industry is concerned when trucks are not totally utilized.

Cost estimates of beef transportation vary widely.1/ Regardless of the estimates, however, one thing is apparent: the cost of transporting beef is substantial. Two significant problems contribute to higher costs of transporting livestock and beef:

--Differing state regulations have an adverse effect on trucking costs.

--Trucks are not utilized to capacity when returning from delivery points.

DIFFERING STATE REGULATIONS: AN INDUSTRY ROADBLOCK

Inconsistent State transportation regulations have been a source of considerable concern in the beef industry. Packers and feeders, in particular, say the disparities in State regulations governing trucking weights and trailer lengths have contributed to industry transportation costs.

Packers complain that differing State regulations governing truck weights restrict them from transporting efficiently. Controversy arises because varying State regulations have created a barrier from the Canadian border (Minnesota and Wisconsin) to the Gulf of Mexico (Mississippi). Carriers attempting to cross the nine States comprising the barrier must limit their loads to the requirements of those States. In some cases this requirement means a truckload of beef could be only two-thirds full. Such limitations increase the final cost of beef since they prevent possible reductions in transportation costs.

1/Estimates of the cost of transporting beef from producers to retailers varied from 3 to 13 cents per pound of carcass weight.

Feeders also complain about the cost of differing State regulations. Their problem, however, involves limitations on the number of trailers that trucks can pull when transporting live cattle. One complaint, for example, asserts that California limits livestock trucks to two trailers, whereas Idaho and Nevada apparently allow these trucks to haul three trailers. As a result higher costs are incurred because additional trips are required to comply with the regulations.

EMPTY TRUCKS MEAN HIGHER COSTS

Trucks often return empty from a trip, making a single load bear the expense of the entire trip.1/ One of the reasons this situation exists is because the Interstate Commerce Act (49 U.S.C. 1 et seq. (1970)) has the effect of restricting the types of loads that ca. be carried on return trips. The transportation of live cattle is exempt from Interstate Commerce Commission (ICC) regulation. If commodities which are exempt from the act are hauled one way, however, the ICC licensing requirements prohibits regulated commodities from being hauled on return trips unless the truckers lease their services to ICC licensed carriers. Therefore, once the original loads are delivered under the present system, livestock truckers have these options from which to choose: they can return home empty, or travel empty to another location where ICC-exempt loads are available. Or they may choose to illegally haul regulated commodities. Alternatively, they can lease their services on the return trip to ICC-regulated carriers.

The irony is that more efficient use of return loads could produce enormous savings. Some food industry spokesmen have estimated that annual savings of more than $300 million would result if return loads could be effectively used among food manufacturers, warehouses, and stores. Significant costs savings might also be attained 2/ by applying this same logic to trucks hauling livestock.

1/A 1976 ICC survey of 13,000 truckers indicated that for 20 percent of all miles driven, the trucks were traveling with no loads. A USDA survey indicated that livestock truckers could not obtain return loads for 90 percent of their trucks.

2/This assumes the ability to clean trucks, which are principally designed for livestock, for a compatible load.

ISSUES FOR CONSIDERATION

Beef transporation costs might be substantially lower except for the effect of inconsistent State regulations and the Federal restrictions on exempt carriers. The following questions should be considered regarding beef transportation costs:

--What effects do different State regulations governing trucking weights and trailer lengths have on livestock and beef transportation costs? If the effects are significant, what could the Federal Government do to encourage States to enact uniform trucking regulations?

--Would changes in ICC restrictions result in lower costs for transporting beef? Would changes result in lower prices to consumers?

EXAMPLES OF CONGRESSIONAL HEARINGS PERTAINING TO MEAT/BEEF

Date	Committee	Subcommittee	Title
Oct. 1969	House Committee on Government Operations	Subcommittee of the House Committee	Federal Responsibility for Retail Price Increases for Beef
Apr. 1972	House Committee on Agriculture	Subcommittee on Livestock and Grains	Beef Prices
Mar. to Apr. 1973	House Committee on Agriculture	Subcommittee on Department Operations	Inquiry into Spread Between Retail Food Prices and Prices Received by Farmers
Apr. 1973	Senate Committee on Banking, Housing, and Urban Affairs	Subcommittee on Production and Stabilization of Prices	Food Prices
Mar. 1974	Senate Committee on Agriculture and Forestry	Subcommittee on Agricultural Production, Marketing, and Stabilization	Farm and Retail Prices of Beef
Apr. 1974	House Committee on Agriculture	Subcommittee on Family Farms and Rural Development	Impact of Transportation Policies
June 1974	House Committee on Agriculture	-	Livestock and Poultry Price Situation
June 1974	Senate Committee on Commerce	Subcommittee for Consumers	Consumer Food Costs
Dec. 1974	House Committee on Agriculture	Subcommittee on Livestock and Grains	Temporary Program for Reduced Rate Beef Cattle Feed
Feb. to Mar. 1975	Senate Committee on Agriculture & Forestry	Subcommittee on Agricultural Production, Marketing, and Stabilization of Prices	Food Market Structure and Marketing Costs

APPENDIX I

EXAMPLES OF CONGRESSIONAL HEARINGS

PERTAINING TO MEAT/BEEF

Date	Committee	Subcommittee	Subject
Sept. to Oct. 1975	Senate Select Committee on Nutrition and Human Needs	-	1975 Food Price Study
Mar. 1976	Senate Commmittee on Finance	Subcommittee on International Trade	Meat Imports
Mar. 1977	Senate Select Committee on Nutrition and Human Needs	-	Response to Dietary Goals of the United States Re Meat
Aug. to Oct. 1977	House Committee on Agriculture	Subcommittee on Livestock and Grains	The Bedell-Thone Bill (H.R. 7393)
Sept. 1977	House Interstate and Foreign Commerce Committee	Subcommittee on Oversight and Investigations	FDA's Regulation of Antibiotics Used in Animal Feeds
Oct. 1977 thru June 1978 (Various Dates)	House Committee on Small Business	Subcommittee on SBA and SBIC Authority and General Small Business Problems	Meat Marketing

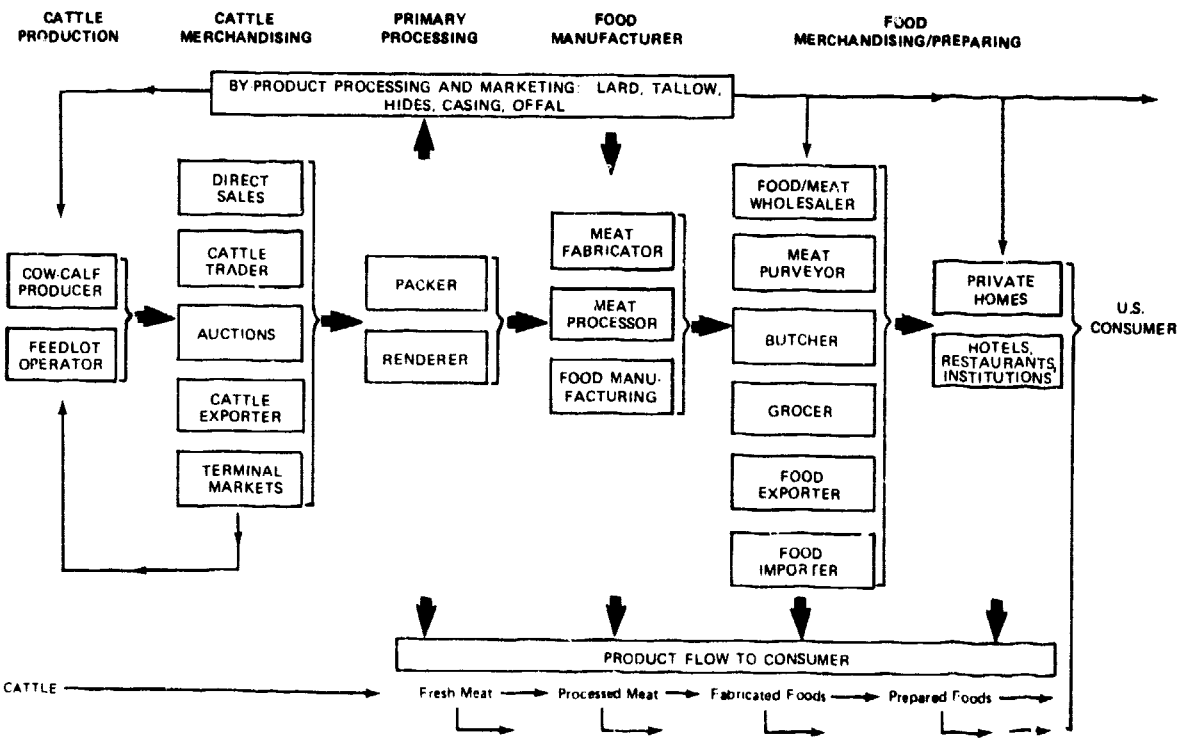
APPENDIX I

APPENDIX II

CONSUMER PROCUREMENT AND CONSUMPTION OF BEEF

	Disposable income per capita				
	Total disposable income	Spent for beef	Percentage spent for beef	Per capita consumption (retail pounds)	Average retail price per pound (CHOICE Beef)
1960	$1,934	$ 51	2.7	64	$0.80
1961	1,976	52	2.6	66	0.79
1962	2,058	54	2.6	66	0.82
1963	2,128	55	2.6	70	0.79
1964	2,278	57	2.5	74	0.77
1965	2,430	59	2.4	74	0.80
1966	2,597	64	2.4	77	0.83
1967	2,740	65	2.4	79	0.82
1968	2,930	70	2.4	81	0.86
1969	3,111	79	2.5	82	0.96
1970	3,348	83	2.5	84	0.99
1971	3,588	87	2.4	84	1.04
1972	3,837	98	2.5	86	1.14
1973	4,285	110	2.6	81	1.36
1974	4,646	120	2.6	86	1.40
1975	5,077	130	2.6	89	1.46
1976	5,511	133	2.4	96	1.39
1977	6,037	128	2.1	93	1.38

APPENDIX III



ENTERPRISES OF THE BEEF MARKETING SYSTEM

APPENDIX IV

COURT CASES INVOLVING THE BEEF SYSTEM

Supermarket a/

Civil Action 3-75-0702, Pony Creek Cattle Company, Inc., et al. v. A&P et al.

Civil Action 3-76-1237-C, Shoshone Tribe of Duckwater et al. v. Safeway Stores et al.

Civil Action 3-76-1238, Meat Price Investigators Association et al. v. Safeway Stores et al.

Civil Action 3-76-1244, Richard S. Lowe et al. v. Safeway Stores et al.

Civil Action 3-76-1248, A. L. Black et al. v. Allied Supermarkets, Inc., et al.

Civil Action 3-76-1253, Chaparral Cattle Corp., et. al v. Safeway Stores et al.

Civil Action 3-76-1254, Burke Petersen et al. v. Safeway Stores et al.

Civil Action 3-76-1255-C, James F. Boccardo et al. v. Safeway Stores et al.

Civil Action 3-76-1361, Ronald Becker et al. v. Safeway Stores et al.

Civil Action 3-76-1470, John O. Varian et al. v. Safeway Stores et al.

Civil Action 3-77-0360, Ronald Becker et al. v. Safeway Stores et al.

Meat packers a/

Civil Action 3-77-0990, Darrell Cameron et al. v. Iowa Beef Processors, Inc., et al.

Civil Action 3-77-0361, Meat Price Investigators Association et al. v. Safeway Stores et al.

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a/These cases were all consolidated in United States District Court, Northern District of Texas, for pretrial hearings.

Civil Action 3-77-0362, Little Ranch Co., Inc., et al. v. National Association of Food Chains et al.

Civil Action 3-77-1080, Don Ludvigson et al. v. Iowa Beef Processors, Inc., et al.

Civil Action 3-77-0780, Meat Price Investigators Association et al. v. Iowa Beef Processors, Inc., et al.

Other cases

Civil Actions 821982 and 824[illegible] [illegible]b & Sons, Inc., et al. v. Schaake Packi[illegible], Superior Court of Washington for [illegible]

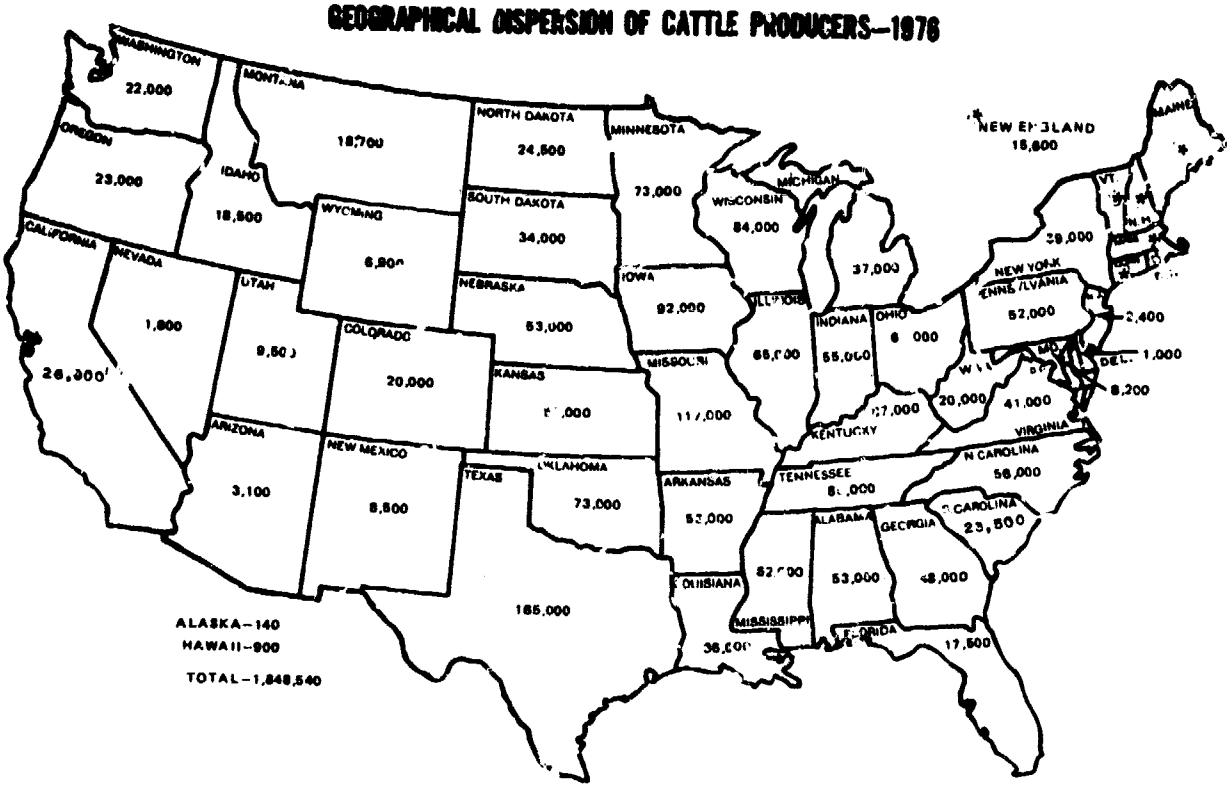
California Public Interest [illegible] up, et al. v. National Meat Packers, Inc., [illegible] Superior Court of the State of California for [illegible] County of San Diego.

Civil Action 5-77-105, [illegible] [illegible]tlefeeders, Inc., et al. v. Safeway Stores, [illegible], [illegible] al., U.S. District Court for the Northern District of Texas, Lubbock Division.

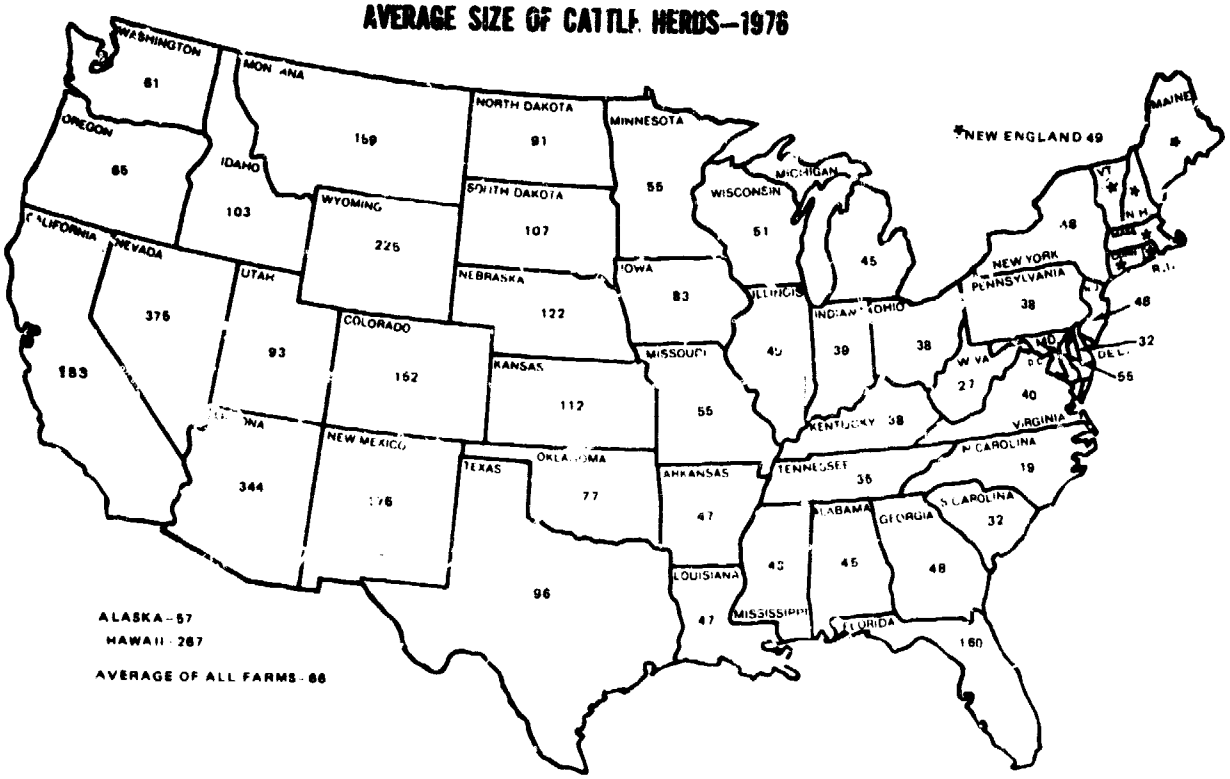
NOTE: The cases against the supermarket chains were dismissed in view of Illinois Brick v. Illinois, 431 U.S. 720 (1977). (See p. 27.)

APPENDIX V

GEOGRAPHICAL DISPERSION OF CATTLE PRODUCERS—1976



AVERAGE SIZE OF CATTLE HERDS—1976



SELECTED GAO REPORTS

RELATING TO BEEF MARKETING

"Better Inspection and Improved Methods of Administration Needed for Foreign Meat Imports" (B-163450, Feb. 18, 1972).

"Consumer Protection Would be Increased by Improving the Administration of Intrastate Meat Plant Inspection Programs" (B-163450, Nov. 2, 1973).

"Information on Federal Agencies Having An Impact on Production and Marketing of Meat" (B-136888, Mar. 1974).

"Salmonella in Raw Meat and Poultry: An Assessment of the Problem" (MWD-74-149, July 22, 1974).

"Food Labeling: Goals, Shortcomings, and Proposed Changes" (MWD-75-19, Jan. 29, 1975).

"Department of Defense's Decision to Change Beef Grades" (LCD-75-428, Mar. 19, 1975).

"Improvements Needed in Regulation of Commodity Futures Trading" (RED-75-370, June 24, 1975).

"Use of Cancer-Causing Drugs in Food-Producing Animals May Pose Public Health Hazard: The Case of Nitrofurans" (MWD-76-85, Feb. 25, 1976).

"Procurement of Beef by the Department of Defense--Are We Getting Our Money's Worth?" (PSAD-76-142, May 25, 1976).

"Selected Aspects of the Administration of the Meat and Poultry Inspection Program" (CED-76-138, Aug. 25, 1976).

"Marketing Meat: Are There Any Impediments to Free Trade?" (CED-77-81, June 6, 1977).

"Need to Establish Safety and Effectiveness of Antibiotics Used in Animal Feeds" (HRD-77-81, June 27, 1977).

"Public Rangelands Continue to Deteriorate" (CED-77-88, July 5, 1977).

"A Better Way for the Department of Agriculture to Inspect Meat and Poultry Processing Plants" (CED-78-11, Dec. 9, 1977).

"Regulation of the Commodity Futures Markets--What Needs to be Done" (CED-78-110, May 17, 1978).

"Department of Agriculture's Beef Grading: Accuracy and Uniformity Need to be Improved" (CED-78-141, July 21, 1978).

"What Causes Food Prices to Rise? What Can Be Done About It?" (CED-78-170, Sept. 8, 1978).

SELECTED BIBLIOGRAPHY

Agricultural Experiment Station, Kansas State University, Frozen Meat - Its Distribution Costs, Acceptance, and Cooking and Eating Qualities, Manhattan, Kansas, Research Publication 166, Reprinted July 1975.

Allen, John W., Opportunities for Improved Distribution in the Beef Industry, Beef Industry Task Force White Paper, February 1976.

American Meat Institute, Summary Report - American Meat Institute Meat Clinic, March 31 - April 3, 1976.

American Meat Institute Foundation, Proceedings of the Meat Industry Research Conference, Arlington, Virginia, March 1977.

Arnould, Richard J., "Changing Patterns of Concentration in American Meat Packing, 1880-1963", Business History Review, Vol. XLV, 1971.

Bloch, Barbara, The Meat Board Meat Book, McGraw-Hill Book Company, July 1977.

California Legislature, Senate Subcommittee on California's Food and Agricultural Economy, Hearing on The California Cattle Industry, Vol. I, July 27, 1977.

Carpenter, Dr. G. Alvin, Opportunities for the Beef Industry in Foreign Markets, Prepared for the Beef Development Task Force, Chicago, Illinois, January 1975.

Chicago Mercantile Exchange, How To Make Livestock Futures Work for You.

Colorado State University, Benefits and Costs of Public Regulation of the Production, Processing, and Distribution of Ground Beef, National Science Foundation, Grant APR76-18473, August 1977. (3 vols.)

Corey, Lewis, Meat and Man: A Study of Monopoly, Unionism, and Food Policy, Viking Press, 1950.

Cross, Jennifer, The Supermarket Trap - The Consumer and the Food Industry, Indiana University Prss, 1976.

Duewer, Lawrence A., and Crawford, Terry L., Alternative Retail Beef-Handling Systems, U.S. Department of Agriculture, Economic Research Service, ERS-661, July 1977.

Farris, D. E. and Dietrich, R. A., Opportunities in Cattle Marketing, Paper Prepared for the Beef Development Task Force, June 1975.

Feller, Irwin, and others, Economic and Legal Aspects of the Benefit-Cost Relationships of Federal, State and Local Regulations Concerning the Production and Sale of Ground Beef--Phase I, National Science Foundation Grant No. APR76-18551, by the Pennsylvania State University, Institute for Research on Human Resources, Center for the Study of Science Policy, June 1977. (5 vols.)

Hawkins, Scott, Report for the Meat Price Investigators Association, A Marketing Research Report On: I. the Eight Alternative Marketing Methods for Cattle in the United States, II. The Alberta Hog Producers Teletype Marketing System, III. A Proposed Electronic Teletype System for the Marketing of Cattle in the United States.

Joint Economic Committee, Congress of the United States, The Profit and Price Performance of the Leading Food Chains, 1970-74, April 1977, and revised May 6, 1977.

Livestock Merchandising Institute, The Congress '76 Papers, June 1976.

McKinsey & Company, Inc. for the National Association of Food Chains, A Top Management Approach to Meat Merchandising, October 26, 1964.

National Association of Food Chains and American Meat Institute, Summary Report - Management Clinic on Meat, San Diego, California, March 3-6, 1974.

National Commission on Food Marketing, Organization and Competition in the Livestock and Meat Industry, Washington, D.C., Technical Study No. 1, June 1966.

National Commission on Food Marketing, Special Studies in Food Marketing, Washington, D.C., Technical Study No. 10, June 1966.

New York State College of Agriculture and Life Sciences, Marketing Alternatives for Agriculture - Is There a Better Way?, National Public Policy Education Committee Publication No. 7, November 1976.

Office of Education, Commodity Futures Trading Commission Glossary of Some Terms Commonly Used in the Futures Trading Industry, March 1977.

Office of Technology Assessment, Perspectives on Federal Retail Food Grading, Washington, June 1977.

Oppenheimer, Harold L., Cowboy Arithmetic - "Cattle as an Investment", The Interstate Printers and Publishers, Inc., 1962.

Parker, Russell C., Economic Report - Discount Food Pricing in Washington, D.C., Staff Report to the Federal Trade Commission, March 1971.

Rouse, John, Cattle of North America, University of Oklahoma Press, 1973.

Select Committee on Nutrition and Human Needs, United States Senate, 1975 Food Price Study, Parts 1, 2, and 3, Prepared by the Staff of the Select Committee on Nutrition and Human Needs, December 1975.

Stafford, Thomas H., Methods and Costs of Distributing Beef to the Food-Service Industry, Cornell University, Ithaca, New York, New York's Food and Life Sciences Bulletin No. 36, March 1974.

Stanford Research Institute, International, The U.S. Beef System: Research Opportunities, A Research Symposium Sponsored by the National Science Foundation, Office of Advanced Energy and Resources, July 1977.

Subcommittee on Livestock and Grains, Committee on Agriculture, House of Representatives, Meat Prices and the Public Interest, A Study by the Subcommittee on Livestock and Grains, July 27, 1972.

U.S. Department of Agriculture, Agricultural Research Service, Feasibility of a Physical Distribution System Model for Evaluating Improvements in the Cattle and Fresh Beef Industry, Prepared under contract by A. T. Kearney and Company, Inc., (Hyattsville, Maryland, ARS 52-36, Nov. 1969).

United States Department of Agriculture, Commodity Exchange Authority, Trading in Live Beef Cattle Futures, (Washington, May 1970).

U.S. Department of Agriculture, Economic Research Service, Livestock Marketing, (Agricultural Economic Report 95, Oct. 1966).

U.S. Department of Agriculture, Economic Research Service, In cooperation with Texas and Oklahoma Agricultural Experiment Stations, Price Information and Meat Marketing in Texas and Oklahoma, (Washington, Agricultural Economic Report No. 115, June 1967).

U.S. Department of Agriculture, Economic Research Service, Price Spreads for Beef and Pork, Revised Series, 1949-69, (Washington, May 1970).

U.S. Department of Agriculture, Economic Research Service, Cattle Feeding in the United States, (Washington, Agricultural Economic Report No. 186, Oct. 1970).

U.S. Department of Agriculture, Agriculture Research Service, Cattle Raising in the United States, (Washington, Agricultural Economic Report No. 235, Jan. 1973).

U.S. Department of Agriculture, Economic Research Service, Distribution of the Food Dollar by Marketing Function and Expense Item, (Washington, ERS-587, Nov. 1974).

U.S. Department of Agriculture, Economic Research Service and Agricultural Marketing Service, The Market Functions and Costs for Food Between America's Fields and Tables, prepared for the Subcommittee on Agricultural Production, Marketing, and Stabilization of Prices, Senate Committee on Agriculture and Forestry, March 1975.

U.S. Department of Agriculture, Economic Research Service, The Food and Fiber System - How It Works, (Washington, Agriculture Information Bulletin 383, March 1975).

U.S. Department of Agriculture, Economic Research Service/ Statistical Reporting Service, Livestock and Meat Statistics, Supplement for 1975, (Washington, Statistical Bulletin No. 522, June 1976).

U.S. Department of Agriculture, Economic Research Service, Operations of For-Hire Livestock Trucking Firms, (Washington, Agricultural Economic Report No. 342, July 1976).

United States International Trade Commission, Live Cattle and Certain Edible Meat Products of Cattle, Report to the President on Investigation No. TA-201-25 Under Section 201 of the Trade Act of 1974, USITC Publication 834, Sep. 1977.

Division of Agriculture Sciences, University of California, Pressures on Agriculture, Leaflet 2971, April 1977.

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